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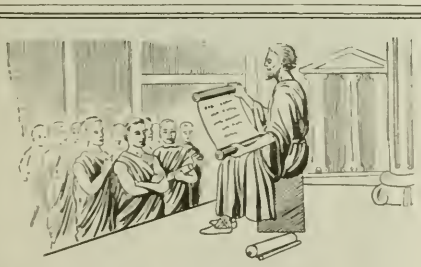

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JOHN B. HAWES, 2D, M.D. LESLEY H. SPOONER, M.D.
EDWARD H. RISLEY, M.D. WILDER TILESTON, M.D.

MEDICINE.

THE TREATMENT OF THYROID AND OTHER ENDOCRIN DISTURBANCES AS VIEWED BY THE INTERNIST.

LICHTY, J. A. (*Am. Jour. Med. Sci.*, June, 1920) writes a very well considered and interesting paper on this absorbing subject. He offers the following summary in brief:

1. Exophthalmic goitre, or hyperthyroidism from other causes, should be recognized early and treated promptly, on lines specified.

2. The earlier it is recognized the more likely medical treatment will be sufficient and give permanent results.

3. The neglected cases, or the cases having definite pathology besides, are likely to require surgery or roentgen ray, or both. In this is included treatment with radium.

4. The roentgen ray treatment of the enlarged thyroid presents most attractive advantages, but the indications for its use do not seem so definite yet, and the results are not so certain.

5. In hyperthyroidism the roentgenologist and the surgeon at best can only break through a vicious circle for which the internist may or may not have been responsible. [E. H. R.]

SURGERY.

CONTRACTION WAVES IN THE NORMAL AND HYDRONEPHROTIC URETER. AN EXPERIMENTAL STUDY.

PENFIELD, W. G. (*Am. Jour. Med. Sci.*, July, 1920) presents the following conclusions from his study:

A crystal or drop of barium chloride applied to the hydronephrotic ureter *in vivo* caused a narrow ring of tonic constriction. From this, at a rapid rate, simultaneous waves of peristalsis and antiperistalsis passed out in both directions to the extremities of the ureter. This constriction ring is analogous to that described in the colon by Cannon.

The ureter is a muscular tube which, when subjected to partial obstruction, always dilates, usually hypertrophies, and whose peristaltic rate is increased.

Contraction waves pass in either direction with equal facility, depending on the location of the area whose rate of spontaneous contraction is most rapid. This area is normally in the renal pelvis, but under abnormal conditions a more rapid pacemaker may be established elsewhere. From the analogy to other axiate organs, it is suggested that underlying the more rapid rhythm of the pace-making area is the fact that its metabolic rate is more rapid than that in any other level of the ureter.

Production of a constriction ring which becomes pacemaker for the ureter above and below it depends on three things: the metabolic gradient, ureteral distention and refractoriness during contraction and the first part of relaxation.

It is suggested that in the passage of a ureteral stone, trauma and inflammation increase the rate of metabolism in the ureter wall about the stone, a constriction ring results, followed by distention of the ureter and retroperistalsis. This would cause great distention of the renal pelvis and give to renal colic its peculiar rhythmical character. [E. H. R.]

(Continued on page vi.)

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(Continued from page iv.)

CARCINOMA OF THE PANCREAS.

SPUD, K. (*Am. Jour. Med. Sci.*, July, 1920) writes a statistical article of considerable interest. The most constant symptom of this series was cachexia. This was present in 90 per cent. In order of frequency the next most common symptom was jaundice in 80 per cent. of the cases. Pain is the third prominent symptom, present in 61 per cent. Personal knowledge on the part of the patient of an abdominal tumor was present in 55 per cent. Ascites was present in 20 per cent. The finding of fat in the stools in excess was not constant or reliable. Eleven cases went to autopsy. The head of the pancreas was most often found envolved, the body next, and the tail least often. The liver is the region most often invaded by metastasis. Palliative drainage of the gall bladder is not a satisfactory procedure. Cholecystectomy is probably the most satisfactory operation. Correct first diagnoses were made in only three cases. The article contains much of interest. [E. H. R.]

MANAGEMENT OF ACUTE APPENDICITIS DEVELOPING IN LATTER WEEKS OF PREGNANCY.

CARTER, N. P., AND MARION, J. M. (*Jour. A. M. A.*, July 10, 1920) discuss this subject and report a case and make the following assertion:

We are entirely opposed to the teaching that operation in the latter months of pregnancy should be reserved for perforation or suppuration cases. The pregnant woman at this period should be given the same chance of recovery that is offered the patient who develops appendicitis in the earlier months, namely, an early diagnosis and prompt operation, not after but before, perforation, gangrene, or peritonitis has developed. [E. H. R.]

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The Massachusetts Medical Society.

MEETING OF THE SECTION OF TUBERCULOSIS, JUNE 8, 1920.

The Value of a County Tuberculosis Survey with Clinics.

By Miss Bernice W. Billings, Boston,

Director of Public Health Nursing, American Red Cross.

Massachusetts Surveys without Clinics. During the years 1917 and 1918 the Massachusetts State Department of Health and the Massachusetts Trustees of Hospitals for Consumptives made official surveys in the cities of New Bedford and Cambridge in relation to the Subsidy Act of 1917. A rural survey was made by the State Department of Health in Barnstable County in April, 1918, for the purpose of locating patients for the newly opened County Hospital. There was no special clinic service connected with these surveys and it was, therefore, impossible to present a report which included the medical findings regarding a large number of suspicious and contact cases, which were visited during the progress of these studies. In Barnstable County practically all the physicians were visited in an effort to obtain data on tuberculous and suspicious cases. Several physicians affirmed that, although a patient had many symptoms of tuberculosis, it seemed unwise to report the case as tuberculosis, when repeated sputum examinations were found to be negative. These surveys showed that a large number of patients left their own physician after a diagnosis of tuberculosis had been made. The patients drifted from one physician to another, without follow-up work and when finally convinced the illness was tuberculosis, it was often too late to obtain an arrest of the disease.

Contents of the Survey. Experience such as this should convince a committee, interested in making a tuberculosis survey and anxious to obtain results, that a plan should be made which would combine the following:

a. Preparation of records.
b. Supervised field nursing.
c. Free clinics with expert medical advice.
d. Accurate report of existing conditions.

Oneida County, N. Y., Tuberculosis Survey. In May, 1919, a conference was held between representatives of the New York State Department of Health, the State Charities Aid Association and the Oneida County Tuberculosis Committee to consider the advisability of making a tuberculosis survey of the county under the joint direction of the State Department of Health and the Oneida County Tuberculosis Committee of the State Charities Aid Association.

This was acted upon favorably and a tuberculosis survey, with clinics was conducted during the summer and fall of 1919. Oneida County is located in central New York State, with an area of 1200 square miles and an approximate population of 174,000 persons. There are two cities: Utica, with an estimated population of 96,000, 50% being foreign born or of foreign born parentage; and Rome, with a population of 28,000, with 26% foreign born or of foreign born parents. The remaining 50,000 are located in the small mill towns and rural sections of the county. The principal industries in the two cities are the manufacture of knit goods, men's clothing, fire arms, machinery, foundry and metal works, comprising important brass, copper goods and wire; while in the rural sections there is the manufacture of knit goods, iron and paper, textile mills, bleacheries, canning factories, farming, dairying and lumbering.

Facilities for Care Previous to Survey. The facilities for the care of tuberculous patients in this county were as follows: The New York State Sanatorium at Ray Brook, Saranac Lake, for the care of early cases of tuberculosis; and the County Hospital, Rome, New York, for advanced cases.

Utica was provided with a clinic two mornings each week, with an average attendance of 4.55 during the year previous and a tuberculosis nurse under the local Board of Health. Camp Healthmere is open six months each year for the care of suspicious and early cases of tuberculosis. The city is also provided with two open air rooms and one open air school.

There was no tuberculosis clinic in Rome. The local Board of Health employed one nurse who divided her time between child welfare, venereal disease, and tuberculosis nursing.

The rural sections of the county were not provided with clinic service and with exception of one town had no local public health nurse. In September, 1919, a county nurse was appointed to do tuberculosis follow-up work.

Utica. The preliminary work for the survey was started in the latter part of May and a card catalogue was prepared of all known cases of tuberculosis since the disease became reportable in 1908 and of all deaths from January, 1914. Four nurses were engaged in the field work which commenced in Utica in June. In connection with this, three clinics were held in Utica in July and August. The examining physicians were specialists in tuberculosis and were located outside the county. Wide publicity was given this work and it was emphasized that specialists would be present to make examinations. This information reached the public through the following channels: Local Boards of Health, local physicians, the press, churches, moving picture houses, and all industries by means of posters, pay enevelope slips, and noon-day talks. Also, through the Temple of Labor and all clubs, such as Rotary, Kiwanis and women's clubs and in the rural sections, through the schools. These agencies, together with home visiting by the nurses, reached thousands of people. This advertising was so thorough that the work became familiar to practically every one in the county. On the first and second of July the first clinic was held. At this time 180 persons were examined and many turned away. There were three examining physicians and, although the clinics were supposed to close at 9 P.M., the waiting list was so long and the people who came were so patient and anxious to see the "Great Doctors" that the physicians remained until nearly midnight, examining and advising.

At the close of the Utica study 461 persons had been examined at these special clinics. Of these 101 were tuberculous, 157 suspicious, and 209 negative cases. Thirty-two of the positive cases had not been registered with the local Board of Health previous to the clinics. A complete detailed report of the findings from each clinic was sent to the State Department of Health and local Board of Health. This included names and addresses of all persons examined, together with diagnosis and medical advice. A brief report of each clinic was, also, sent to all the county papers, both English and foreign and it was found that these reports were very generally read.

Rome. The preliminary work in the city of Rome and in the rural section of the county was carried out in an equally thorough manner. Two afternoon and evening clinics were held in Rome with an attendance of 165 persons. Of this number 38 patients, or 23%, were found to have tuberculosis. Twenty-three of these were unregistered cases.

Rural. Rural clinics were held in ten towns in the county. Five hundred and sixty-one patients were examined at these clinics with a total of 69 tuberculosis patients, 88 suspicious and 404 negative cases. Sixty-two

of the 69 tuberculous patients were unregistered cases. The attendance at the rural clinics was uniformly good, averaging 56 patients at a clinic.

Clinic Centers. The clinics were held in a great variety of places, such as the Dispensary and Court House in Utica, and the Court House in Rome. These court houses made ideal centers for clinics, as they were each supplied with three examining rooms, dressing rooms and an excellent waiting room. The rural sections offered a great variety of places, such as, town halls, club rooms and school houses. As a rule, it was possible to secure a group of three or four rooms, provided with the essentials of light, heat and running water. At one time, a record breaking attendance occurred in one of the mill towns when over 200 persons attended the clinic and the physicians were obliged to make examinations in a large ball room. An election screen was placed in each corner of the room and the physicians worked behind the screens. This was undesirable, as it was noisy, but the examiners accepted the fact that the clinic was located in the only available place in the town.

It was not uncommon for the nurse to arrive at the appointed place for the clinic a few hours ahead of the physician and patients and be obliged to do battle with the remains of various festivities which had previously occurred. This meant real sweeping, dusting, and occasionally helping to set up stoves, lighting the fires, etc.

Literature relating to tuberculosis, care of children and general public health was secured from the State Department of Health and from the various insurance companies in the county and was placed in the waiting room. A serious effort was made to make the patients feel that there was a real welcome awaiting each one.

Examples of Case Finding. The homes of 2796 persons were visited through the county in an effort to locate patients or their families and to urge patients, suspicious and contact cases to come to the clinics.

In the crowded sections of the city the home visiting became almost a house to house search for patients. The inquiries which were made by the nurse in regard to suspicious cases from the grocery man at the corner store in the city, or the housewife in the small town, brought amazing results, often locating active cases of tuberculosis. On one occasion a call was made at a cottage in the rural section of the county to advise the family that a specialist was coming to the town to examine for tuberculosis and to inquire if any one in the family would be interested to come. At this time the nurse noticed that a young woman in the family looked very thin and pale. During this brief visit it was learned that the woman was an attendant and had just come off duty. She was asked to come and see the clinic in operation. After visiting the clinic and assisting the physician, she was finally urged to submit to an examination. She was found to be a suspicious case. Following this an x-ray photograph was taken and the patient returned to a second clinic for reëxamination, at which time a diagnosis was made of incipient tuberculosis, and the patient entered a sanatorium for treatment. In another instance, the nurse took shelter in a house during a thunder storm and, in conversation with the family, learned that the woman next door was "sick with a cough." This potential case of tuberculosis was interviewed, came to the clinic and was examined, with a diagnosis of advanced tuberculosis. These two examples are typical of what is to be found in any section of the country, either city or rural, if the survey nurse is making a serious effort to locate consumptives.

Findings. At the close of the survey, it was found that there were 945 cases for follow up work. 467 were patients reported tuberculous from January, 1916, to December, 1919; 96 were reported previous to 1916; 336 were suspicious cases from the special clinics, and 46 were men exempt from the draft because of tuberculosis.

Of the more recently reported 467 cases, 59 patients were in sanatoria or hospitals while 408 patients were living at home. Seventy per cent. of these cases were under no medical supervision.

In the deaths which had occurred in Utica and Rome for the past three years, 50 patients had worked up to three months of death, 20 patients having been employed to within one month before death. Many of these patients had been ill for a period of from one to three years, and during that time had received little or no care.

Clinics. One thousand two hundred and eighty-seven persons were examined at the clinics from July 1 to December 19. The result of

the examinations was as follows: Tuberculosis, 224 (of this number 117 were unregistered previous to the clinics); suspicious, 390; negative, 683.

Reports. The reports on Utica, Rome and the county were prepared separately and recommendations were made to the effect that:

a. Utica be provided with an evening clinic, a supervising nurse and three assistants.

b. Rome be provided with regular tuberculosis clinics and a follow up nurse.

c. The towns in the county be provided with regular clinic service and local public health nurses.

Copies of the reports of each city, together with the recommendations, were sent to the respective mayors and health officers and were simultaneously published in the newspapers. The county report was also published.

Results. The result accomplished was this:

a. The larger city made an appropriation for the salary of one additional nurse. This salary was augmented by private funds, so that a well-trained nurse might be employed, with the understanding that she supervise the tuberculosis work in the city, under the direction of the health officer.

b. In the smaller city, the County Tuberculosis Committee financed

1. The expenses of a Saranac Lake physician who would hold afternoon and evening clinics every two weeks. This work was placed under the direction of the local health officer.
2. The salary of a well-trained, full time public health nurse to do tuberculosis work in the city under the direction of the health officer. An automobile was provided.

Continuous clinical service was provided for the rural sections of the county. A serious effort is now being made to urge the towns to employ local public health nurses who shall follow up all tuberculous patients. In the rural sections of the county it is perfectly practical to enlarge these tuberculosis clinics into generalized clinics. These services should be operated, when possible, by out-of-county experts.

This work does not interfere with the practice of the private physicians, but rather adds to this practice by referring patients for subsequent advice. Throughout the county the nurses received the heartiest coöperation from the health officers and physicians. In several towns the local health officer visited patients and urged them to come in to the clinics for examination. The examining room was often a very interesting sight, as the visiting examiners would have from one to four or five local physicians examining patients and talking over cases.

The approximate cost of this survey was $8,000, but it would appear to be a modest sum when it is remembered that 117 unregistered cases of tuberculosis were located for follow up work.

State Departments of Health, local Boards of Health, private organizations engaged in tuberculosis work and private physicians should demand tuberculosis surveys as a preliminary to more intensive care of tuberculous patients. In conjunction with this, clinic service should be provided not only in the cities, but also in rural sections. Trained public health nurses must be employed to prepare for clinics and to follow up the patients.

A detailed report should be made of the survey findings, and this should be given widespread publicity in order to achieve results.

DISCUSSION.

DR. ARTHUR K. STONE, Framingham Center: We are fortunate in having Miss Billings, who has had more experience in survey work than anyone else in this State, with us. She has taken part in four surveys—three in large cities of 100,000 inhabitants and one on the Cape district, and in addition this rural work in connection with her Utica work. The message she brings us is well worth our enthusiastic attention.

There are two varieties of surveys that come up; one, the group survey, if we may call it so, where a small group of people, or a committee, want to know what conditions are, preparatory to launching a campaign; and a general survey, such as we have had described, which is really for the benefit of the whole community. That is the one that we want to consider.

In order that it should be effective it must be conducted first of all perfectly honestly and straightforwardly, without the intention of "getting" any public official, but of telling the truth and facts to the people who are interested. If that is done, and the health officials are wise, and do not consider it a criticism on themselves, they will turn the survey to their own advantage in carrying out the things that they see they should have in their community.

The city of Cleveland has just had a very extensive survey made, not only in regard to tuberculosis but in regard to general housing conditions and health in industries, condition of their hospital, and so on. They imported Dr.

Haven Emerson, who was the Health Commissioner of New York for a time, to superintend the survey. His work was supplemented by a large staff that he drew from all over the country. At the completion of the survey, when the reports were all in, there was a grand mass meeting of the citizens of Cleveland interested in the subject and portions of the report and the conclusions were read, and, of course, appeared on the front pages of the newspapers. In Utica last year the success of Miss Billings' work was very largely due to the fact that it was advertised, as she has told you, in the papers, on the front page and in big type, and in the various languages in which papers were published.

Several years ago the State Department of Health and the Trustees of Hospitals for Consumptives conducted a survey of the city of New Bedford and at the end one of the members of the Board of Health published the conclusions in the local paper. This was very much to the annoyance, at first, of the energetic health officer of New Bedford, but after a short time he was made to see that it was simply backing up what he had been asking for for a number of years, and as a result of this work New Bedford has been put in a very enviable position. Probably no other city, with possibly the exception of Manchester, N. H., which has had a clinic which has been going up steadily in the last few years, has a clinic as good as the one at New Bedford. Almost every clinic in Massachusetts shows a run-down condition rather than a run-up condition. Manchester and New Bedford are the only two cities, to my knowledge, that have gone in the other direction.

I think that a large part of that work in New Bedford has been due to the enthusiastic carrying out of the suggestions made by the Department of Public Health through Miss Billings' survey.

Just at the beginning of the war a similar survey was made in Cambridge. Conditions much more to be criticized were found than had previously been found in New Bedford, but on account of the stress of war, influenza, and one thing and another, it never received any publicity and, so far as I know, the work of that survey has fallen absolutely flat. The Boston Tuberculosis Association at one time carried on a careful survey in one of the sections of this city. The result was to find a great many cases of tuberculosis, a great deal of unsuspected bad housing conditions, a large number of children uncared for, who were tuberculosis contacts. These conditions were put before the various local, medical and philanthropic organizations. At first, they were very much horrified. One or two of the clubs considered it at their meetings but it was all done privately; it never got into the papers. After mature consideration they decided that they could not do anything because it might affect the real estate in the neighborhood and might prejudice people from going to live in that part of the city. Nothing came of it.

The one point I want to emphasize in regard to Miss Billings' paper is that if a survey is made honestly and discloses undesirable conditions, in order to have any effect it must be given a lot of front page publicity.

Dr. Eugene R. Kelley, Boston: I do not know that I have very much to add in the discussion of this question. We have at the present time two great sources of regret in the tuberculosis campaign. There is a great loss of life, which I think anyone must say is partially preventable; then there is a great loss of money in the campaign as we are now carrying it on, because we are bringing the most expensive part of our anti-tuberculosis machinery, *viz.*, the institutional end of the work, to bear on the wrong end of the individual case. Everybody has got to concede that those are the two most glaring defects in the tuberculosis campaign of today.

I feel strongly that all persons interested in tuberculosis work ought to heed these two points that have been brought up—on the one hand, Miss Billings' point—taking account of stock—and the other, that Dr. Wagner will bring out—how to provide machinery to keep continuously in touch with the tuberculosis needs of the community. I feel strongly that at the present time these are the two great duties of the medical profession.

Miss Billings has brought out very clearly how well the average practitioner of central New York State responded to the opportunity of the clinic. It is my hope and belief that the physicians of Massachusetts generally will do the same. We have never yet gone about the matter of finding the tuberculosis cases in an intensive fashion. The plan that has been found so successful in these local surveys ought to be made state wide. There is a great stumbling block in the path of local city dispensaries. Dr. John Smith, a man in general practice, is rather interested in tuberculosis. He gives a certain amount of attention to it and becomes the attending physician at the dispensary. His brother physicians feel one of two ways—either they think John Smith does not know any more than they do therefore they have not anything to learn by sending a patient to him; or, if he does know something more about it, the chances are very great that attendance at a clinic on that basis will only lead to the aggrandizement of Dr. John Smith's practice and to the detriment of their own. This is one of the great difficulties at the present time as to attendance at our clinics.

I think that in order to make a definite effort to locate and follow up tuberculosis patients, the State and sub-divisions of the State, *i.e.*, County and City governments, ought to pro-

vide a type of expert consultation service that will not be a financial burden on the individual patient, because many of them cannot afford it. This service would not in any sense be detrimental or injurious to the private practice of the physicians of the town. One ultimate solution of that is an outside man who is of recognized professional standards, whether attached to an institution or not. I feel strongly that the Medical Society ought to put itself strongly in favor of that kind of a development. I do not believe anything else will ever solve it. Tuberculosis is a matter of a specialist's judgment in determining the diagnosis. I hope to see the Medical Society moving towards this end. It will cost some money to inaugurate such a medical service. I do not know just how much, but I think it will ultimately save money.

A Plea for a Department of Tuberculosis in Medical Schools.

By William J. Gallivan, M.D., Boston.

Director of the Department of Tuberculosis, Massachusetts State Department of Health.

There is a widespread feeling that the Government is not getting a satisfactory return on the money expended in its efforts to stamp out pulmonary tuberculosis. In this State it requires an annual appropriation of $800,000 to maintain the four state sanatoria. In addition to these sanatoria we have five county hospitals, 14 municipal hospitals and 53 dispensaries devoted to the care of tuberculous patients. A conservative estimate of the annual cost of caring for such patients in Massachusetts has been placed at $3,000,000. Add to this the original cost of site and buildings, the economic loss due to disability and death, and multiply this amount by the number of States in the Union, and we get a figure which staggers all thinking men. The return on this investment shows an annual death rate of 200,000 people.

The best minds in tuberculosis work place the failure to secure better results upon the delay or inability on the part of the general practitioner to recognize the signs and symptoms of early pulmonary tuberculosis. In a study of 500 cases of pulmonary tuberculosis in our state sanatoria, 75% of whom were classified as moderately advanced or advanced, Hawes showed that 285 of this number were told by the family physician that they did not have consumption. Discussing Hawes' paper, Dr. Richard Cabot said he believed the same condition was true of every state in the Union. Small wonder then at the activities of the laymen in tuberculosis work.

At the opening address of the Sixth International Congress on Tuberculosis, Devine said: "Why should laymen, that is, teachers, business men, nurses, social workers, and others, who are neither sanitarians nor physicians, come to this international congress? Because doctors have been remiss. In other words, if doctors and health officers did their duty we should not be here."

In 1916 McCrae discussed the divorce of tuberculosis from general medicine. That some measure of separation had taken place he said was useless to deny, and both sides were losers. The lack of knowledge of this disease among some members of the profession is often a tragedy. He called this state of affairs a problem, and said the one explanation of this problem was "poor teaching." In "Early Pulmonary Tuberculosis," published by Wood & Co., Hawes says in the majority of our leading medical schools the subject of tuberculosis receives scant attention. Students are still taught that in order to make a definite diagnosis of pulmonary tuberculosis there must be bacilli in the sputum, or marked evidence of a consolidation in the lungs, as shown by dulness, bronchial breathing, increased vocal and tactile fremitus and râles. That a diagnosis can and should often be made without a positive sputum and without many of these signs in the chest is rarely brought to their attention.

Thayer is quoted as saying that in the great majority of our schools today the instruction of the student in tuberculosis is to say the least rather fragmentary.

Landis quotes from a report of a committee appointed to investigate the methods used in teaching tuberculosis in various medical schools, out of 40 schools so investigated only seven had a course in tuberculosis which could be considered at all adequate.

With this evidence before us we can fairly assume that the teaching of tuberculosis in medical schools is inadequate, and on account of this inadequate teaching the general practitioner is not properly equipped to make a diagnosis of early pulmonary tuberculosis. To discuss the value of early diagnosis before this Section is bringing coals to Newcastle. Bartlett's view of its importance, however, is worth quoting: "The fact remains that when a case of this disease is discovered early and the

present methods of treatment are carried out intelligently, from 60 to 80% of the patients recover. It does not need any new specific, it does not need anything but the early discovery of the cases." "The next step in tuberculosis work," says Donald Armstrong, "is the first step, namely, the discovery of the disease." To this slogan I add the word "early." There is a stage well recognized by signs and symptoms even before the standardized classification, "incipient." This stage might properly be called the early activation of a tuberculous infection. One hundred per cent. of these cases go first to the general practitioner. In this stage home treatment as practised by Pratt would achieve glorious results. Any steps, therefore, which will equip the family physician to recognize pulmonary tuberculosis at this stage will inspire tuberculosis workers with renewed courage and hope in their efforts to conquer consumption.

With this end in view, we plead for the creation of a Department of Tuberculosis in Medical Schools. The general practitioner is our first line of defence in all invading illness. To strengthen this line to the greatest degree of efficiency is to insure the safety of the besieged city. Through this department the research results of 20 years of intensive tuberculosis work can be epitomized and taught. The policies of proven merit of these years of untiring effort can be demonstrated. With earnest instructors, worthy of affiliation with Grade A medical schools, the course could be made indispensable to students and furnish better training for the future general practitioner.

For these men who are now engaged in general practice the Department of Public Health proposes a series of consultation clinics in pulmonary tuberculosis. Plans have been perfected for the creation of 16 consultation clinics in various cities and towns in the state. These clinics will be conducted by physicians attached to the state sanatoria and the family physician will be able, without price, to obtain expert diagnosis in his tuberculosis cases. In addition to this we plan to demonstrate the case in detail to the family physician: history taking, method of making physical examination, interpretation of the signs elicited by auscultation and percussion, as well as interpretation of the symptoms revealed by the history of the case, will be thoroughly discussed. In this effort we expect hearty coöperation from the general practitioner. For, in the words of Voltaire, "Men who are occupied in the restoration of health to other men by joint exertion of skill and humanity are the great of the earth."

These are days of reconstruction. Medical schools and medical men may well give ear to the present unrest in tuberculosis work. The present condition of affairs is no longer a professional secret. Popular magazines teem with criticisms of them, and the remedies suggested, as might be expected, coming from those on the verge of despair, are drastic.

The adoption of these policies will provide a bigger army of better trained men. Such reinforcements will delight the pioneers who have borne the brunt of the battle with varying success, and who through these agencies see the dawn of victory in the conquest of consumption.

DISCUSSION.

Dr. Arthur K. Stone, Framingham Center: About a quarter of a century ago a callow youth just out of the medical school had a vision. It was a great vision. He saw relief for the people who were dying of consumption in the tenement houses in all parts of the city. At his suggestion a bill was introduced into the Massachusetts Legislature to provide for the construction of a sanatorium for the care of these people. Dr. Lawrence Flick, one of the leaders in the tuberculosis movement in Philadelphia, and in the whole country, wrote to this man that it was a great idea but that no government would ever undertake the tremendous job of caring for tuberculosis.

A great many of you gentlemen are too young to know anything about the terrible conditions existing before the sanatoria and hospitals for consumptives were built. All that floating tuberculous population, dying in the tenements under most distressing conditions, have disappeared. Dr. William J. Gallivan's vision has come true.

In Framingham, where they have a record of nearly ten active tuberculosis patients to each death, they find that they need for the care of the people that are under observation, at least one bed for every death, and I do not believe for one that the tuberculosis work began at the wrong end when it began with building institutions. It may be staggering in the amount of cost, but I think the good that has come, the saving of misery and helplessness, in addition to the saving of a great many lives, is due to the well hospitalized condition of Massachusetts. I believe that we need every bed that we have; that we have empty beds is a misfortune. We have the patients and the beds should be filled; that they are not is because the local authorities do not realize their opportunities. The expense

is nothing compared with the benefits that have been received.

DR. EDWARD O. OTIS, Boston: I want to speak of what we are doing at Tufts College Medical School in teaching tuberculosis. There is a professorship of pulmonary disease, and students of the third and fourth years receive instruction in this branch. It consists chiefly of a system of didactic lectures giving a general program of the whole disease, covering, one might say, the fundamental points, and, most important of all, a series of clinics extending over the third and fourth years. We have three institutions which provide these clinics. First, the Mattapan Consumptives' Hospital; second, the Out-Patient Department of this same hospital, in which various instructors connected with this division give instruction in the diagnosis of early cases and suspected cases; third, the Tuberculosis Department of the Boston Dispensary. These classes are divided into sections of about seven or eight students and the clinics last about two hours. They are continued a certain period of time, altogether too short, but such are the demands on our students that our time is limited. The most important part in the teaching of tuberculosis are these clinical sections, in which the students at first hand meet the cases and are taught how to examine patients, how to obtain the history, and something about the social side of the patient. They are also given instruction in x-ray determination, and they are also, as time permits, given sputum to examine. So that we feel that these students when they graduate have some fundamental knowledge of tuberculosis; have some idea of how to make an early diagnosis. At the end of the third year they have an examination upon that subject alone, and at the end of the fourth year a part of the examination—one of the three papers on clinical medicine—is upon tuberculosis. This has been going on for the last fifteen or more years and we feel that the students, when they graduate, have some fundamental and clear knowledge of how to go to work to make a diagnosis of tuberculosis.

One other point I would like to add in reference to what Dr. Gallivan has said in regard to general clinics for practitioners, that is a school at the sanatorium. I have spoken of this before. I have often felt that our State sanatoria can do a great deal more than they do in giving instruction in tuberculosis. I do not see why a school, lasting from ten days to two weeks, could not be held, giving intensive work, and the physicians in the community invited there, giving free lodging, free board, and possibly some man from Boston, or elsewhere, who is an expert, to join with the staff at the sanatorium. In that way an intensive course could be given to physicians which would be exceedingly valuable. This could be repeated time and again. It seems to me some such plan as this would be of great value.

One other point with regard to our own teaching at Tufts Medical School. We did use for a year or more, until the war came, the sanatorium which is nearest to Boston—North Reading. We sent some of our students out there with great advantage to them. They had clinics and saw the cases under sanatorium conditions. Such an arrangement was very popular with the students and was heartily entered into by the staff of the santorium.

DR ERNEST B. EMERSON, Rutland: I think Dr. Otis' suggestion that intensive courses be given at the sanatoria and furnishing room and board for whoever is interested enough to come, would be a very good thing if the Doctor would suggest some way to house these people.

This spring we have held at Rutland a series of lectures once a week to which the physicians of the surrounding country have been coming. We have taken the subject up in a general way—told them about the classification, the methods of diagnosis and treatment. Anybody can diagnose an advanced case, but it is frequently extremely difficult to diagnose an early case. These physicians have been driving in to Rutland from miles around and I have been very much surprised at the interest shown. Rutland, as you all know, is located in the central part of the State, rather a remote community and difficult to get at, yet these men have been coming in from a distance of 15 to 20 miles. That indicates interest in the question of tuberculosis. I think if they can have information on tuberculosis put in front of them in such a way that they can get at it they will go for it.

What Dr. Gallivan has brought out in his paper about starting a consultation service is a most execellent idea. I think it can be done in such a way that it will not conflict with the general practitioner and I believe that it will bring about a spirit of coöperation between the general practitioner and the sanatorium men. The general practitioner is meeting many of these cases as we meet them in the sanatorium, where a diagnosis is extremely difficult to make. I feel that the patient ought to be given the benefit of the doubt. I believe that if the doctors are unwilling to commit themselves by making a flat diagnosis, and in some instances they are justified, they will take advantage of such a service. Get the patients started; give them the benefit of the doubt. If they have a case of typhoid fever they treat that; if it is a suspected case they treat it as a suspected case of typhoid. They give the patient the benefit of the doubt. I think that ought to be done in tuberculosis. It is not necessarily a sentence of death to the patient. It may give the patient a little jolt but if he does not get that little jolt sometime he is not going to get well. We

see too much of this end-result business in the sanatoria: cases which, if we can believe their histories, it seems to me have been handled in a way which is almost criminal. I do not think that represents the majority of men, but we do get those cases occasionally.

I think that giving a course in the medical schools is one way to bring about a better understanding of the disease. Anything that can be done to bring about earlier diagnosis is worth while and will be well supported.

Itinerant Consultation Service.

By H. S. Wagner, M.D., Pocasset, Mass.,

Superintendent, Barnstable County Infirmary.

Consultation service for the detection of tuberculosis had its inception in the Framingham Health Demonstration. After a certain time, there, results were analyzed and it was found that the time of one of their chiefs was being requested regularly each month by physicians of that community to assist them in their diagnosis of tuberculosis. It was evident that some activity had developed which was beneficial. Therefore, it deserved a name and was dignified by the name of consultant service. Barnstable County was in the meanwhile opening a small tuberculosis sanatorium and presented the opportunity of utilizing their resident physician in attempting such a service. The committee of the Massachusetts Tuberculosis League, having the work in control, advised that it be supported by clinics, the wisdom of which course is now shown to be fully justified. The advantage of this plan was that it gave a working base, quite consistent with the purpose and of use to the consultant in the disposal of the cases. During the first year, anything in the nature of so-called propaganda carried directly to the people has not been attempted. The scheme was to work through the physicians, visiting nurses, and the local health boards.

The work was made further possible in the support given it by the large state organizations, State Department of Public Health, Trustees of Hospitals for Consumptives, and the Framingham Health Demonstration. Their representatives introduced the consultant generally at medical and board of health meetings or personally to the different physicians on the Cape. Some such proceeding by a representative person, having the entire confidence and respect of the community is absolutely essential to the success of this project.

In the handling of consultation cases, our experience has shown two possible contingencies liable to arise, both of which should be referred to the physician requesting consultation. Before the examination, the question of permitting an informal discussion in the presence of the patient should be decided. In this event, the patient is liable to join and subject both to a bombardment of questions—the direct answers to which are embarrassing. On the other hand, it might better be decided to reduce discussion to the minimum during the consultation and have the general practitioner act as spokesman in presenting the case finally. At the end of consultation, if the diagnosis is positive, it is the duty of the physician to report his case.

The consultations were held when and where it was deemed to be most convenient to the patients in case of an urgent call; otherwise, it was generally understood that the time would be limited to those days on which clinics were scheduled in that vicinity. Two-thirds of the physicians on the Cape have used this form of the service. One-half of them have used it two to four times. At present writing, there is expected a total of five to six consultations monthly.

In estimating this work, certain advantages and disadvantages are to be considered as to geography and concentration of population. At least a day is required to make Provincetown, which is sixty-five miles distant from the local sanatorium. When the trains are on schedule, a two-hour period of working time is effected; otherwise, a night lay-over is required to complete the work the following day. It is also necessary to spend a day in each of two other towns on the eastern end of the county. The remaining towns can be visited by automobile because of the good roads—a distinct advantage in saving time.

Obviously, it would be much easier to conduct the work, if this 30,000 lived compactly in the space required by the ordinary small city with that population—where but one visiting nurse association and one board of health would have to be approached—also where opportunity would be offered to meet the physicians oftener in their medical meetings. Under present conditions, one has to examine fifteen sets of records for deaths from tuberculosis, and to interview fifteen boards of health.

The clinics are conducted bi-monthly in Provincetown and monthly in Hyannis, Falmouth, Bourne, and Sandwich. They cover the usual class intended for in the cities, also another class that call a physician so seldom in their extremities that they are forgotten; also any group of patients who, their physicians believe, can be dealt with more quickly collectively than individually: for instance, parts of families and school children.

Much reliance is placed on the local visiting nurse in the operation of the clinics. Some few cases are found by her alone. They are such as she can prove to her own satisfaction to have been without medical attendance. Inasmuch as she comes in intimate contact with these families in her problem of school nursing and child welfare work, she has an advantageous position from which to observe a possible prospect for the clinics.

The final figures of the year's work cover 148 examinations, 77 of which were made in the clinics and 71 in consultations. Naturally in the consultations were found a greater percentage of tuberculosis, because all cases were selected by physicians. On the other hand, there were many more children examined in the clinics. The exact figures are as follows: Total adults, 93, of whom 36 were diagnosed positive, and 55 children, of whom 6 showed tuberculosis of bones or glands, and 2 a pulmonary form of disease. The latter eight are not included among 17 children reacting positively to the skin test with Koch's old tuberculin.

Out of 148 examinations, there were found 44 positives. It is not to be understood, however, that this means 44 first-hand diagnoses. As a matter of fact, in 17 of these cases, there were no doubts of the diagnosis in the minds of the physicians requesting the consultations. For instance, one physician might wish to impress his patient more strongly, and accordingly have his advice as to diagnosis and treatment seconded. In another group of cases, the physicians were quite suspicious of tuberculous disease, but hesitated to announce a decision to the family, so they left it for the consultant to do. In one case, a diagnosis was held in abeyance, it seemed, because the physician disliked to decide any issue on general principles. In these cases there was not much that could be added in the way of diagnosis, except to classify them on the basis on which patients are entered and discharged from a sanatorium. As a discussion passes from one of diagnosis to prognosis and treatment, the function of the consultant seems to become more useful, because it is in this field that he has had the experience to enable him to foretell the chances of future convalescence and relapse. These diagnostic aids are not so much a matter of skill as of time and persistence in getting together all data concerning a case. This is exactly what the busy practitioner has not time to do, for which reason, also, the recording of statistics in general and laboratory assistance are angles to be developed in a consultant service.

This classification procedure is becoming more interesting to them, whereas, heretofore, it was regarded as inconsequential. It involves considerable time to classify a patient, giving due regard to the past history of disease, present symptoms and signs. The time element of a tuberculosis history and its unknown infection leave so much to speculation that a busy practitioner, having settled the diagnosis, will thus overlook classification and skip to treatment. Still it has been largely through the study of classification that we have attained much that we now know concerning the course of tuberculosis.

Of these 17 cases, five were arrested and eight were active and showed tubercle bacilli in sputum. One has been regarded as active for several years but tubercle bacilli have never been demonstrated. A guinea pig has been injected with sputum three times without result. We are now waiting the availability of an x-ray plate.

This leaves 27 cases that were diagnosed first hand by the consultant. Seventeen were active, of which four were positive for tubercle bacilli, while among the 10 inactives none was positive for tubercle bacilli. Eighteen of this group of 27 were classified as incipients. One of these had tubercle bacilli in sputum for one month, which was fortunate, because he exhibited no well defined râle in either lung. In eight cases, the diagnosis was made without finding the typical râle succeeding cough, detailed as follows: In two of these, râles were atypical of tuberculosis both as to sound and location. Both were post influenzal by several months. Their sensitiveness to twentieth milligram doses of Koch's O. T. threw the diagnosis in favor of tuberculosis in the absence of an x-ray plate. One case had enlarged cervical glands, low grade fever, positive family history, and a chest

that we like to regard as fibroid. Certain signs drew our attention to the kidneys and necessitated an examination of the urine, demonstrating tubercle bacilli therein. Another of this group was interesting. He was a man of 61, whose history, both personal and family, was not considered positive enough to suggest at first even a tentative diagnosis of tuberculosis and whose chest findings corroborated this idea. However, greatly to my surprise, a small morning specimen of sputum sent to the laboratory routinely revealed tubercle bacilli. Even then, a chest examination could not only lead one to presume on the affected side. The x-ray plainly showed it to be both sides. Strangely enough, this case was not sent in by a physician, but came for a little rest, as he expressed it. In three weeks, under rest treatment, the morning sputum had entirely dried up. When the patient was acquainted with the significance of such positive sputum, he then recollected the past periods of raising. One speculates then on some kind of a drag-net in which such cases can be caught. The answer seems to be persistent investigation applied uniformly to history, laboratory, and physical diagnosis from all angles.

Another illustration is that of a Portuguese woman, 38 years of age, at present in her ninth pregnancy, and who is developing definite râles following cough; also, a comparatively young man, breaking down in work of an exhausting nature, necessitating driving his own automobile for 150-200 miles daily during the fall prior to the recent severe winter.

It can be seen that there are indications of a remarkable resistance to a tuberculosis among this type of case brought to light by extra effort. In their histories are points confused with asthmas, kidney disease, congestion of lungs, pneumonias, etc. This is very different from the frank cases where the histories are clean-cut with exact milestones pointing to tuberculosis and generally nothing else, which cases present themselves so openly as invalids that they are generally provided for in cities at the rate of a bed for every death.

There are two classes that the consultant service seeks especially: those perpetually moving up to take the place of the latter, and those older individuals with an unusual resistance to the disease. Just how much sooner the consultation service can anticipate pulmonary tuberculosis in the first class with a diagnosis and thereby lessen the period of infectivity is a question, because their onset of symptoms ordinarily sending them to a physician and the demonstration of tubercle bacilli are not far apart. The close scrutiny of much data alone will tell. At present, we think we can show ten cases coming under this head. Still it is unsafe to predict how much good, therapeutically, can be done for them until a year has elapsed at least, because of the inexorable course that pulmonary tuberculosis is known to pursue in younger people.

Therefore it seems that the greatest good will be derived from persistently trailing the elderly inactive and advanced type of case heretofore illustrated. Our experience with these show that they have undoubted periods of infectivity and some of them seem to be entirely unaware of it. It might be added here that some of this class are capable of dying from other causes than tuberculosis. Six of our positive diagnoses show evidence of this high resistance. The remainder exhibited the usual type.

NEGATIVE CASES—ADULTS.

There were 57 adults in whom a diagnosis of tuberculosis could not be returned. Two were less than eighteen years old. They cover many types of conditions like lung abscess, atrophic rhinitis, asthma, frontal sinus infection, endocarditis, arthritis, broncho-pneumonia, and indefinite heart conditions. It seems that several of these cases had requested their physician for consultation or examination at the clinics—the latter being quite aware that no tuberculous disease was present.

In others, there were certain signs and symptoms pointing to tuberculosis, but inconsistent with its course. Some of them were ruled out by milligram doses of Koch's old tuberculin. In nine of these where no reaction was obtained, there was quite a comforting assurance that they were negative. With the consent of the physician requesting the consultation, it would have been used in most of the negative cases, providing circumstances had permitted it. A negative result is invaluable in case records.

ASTHMAS.

The asthmas in this group are interesting and definite enough to mention further. They have been more consistent than any other condition in producing signs and symptoms liable to be mistaken for pulmonary tuberculosis. The term

is used generally and no attempt will be made to classify them. None of the cases was subjected to the tests for protein hypersensitiveness.

There were twelve, aged from twelve to fifty-one years. They showed squeaks and groans generally throughout the lung or only on one side towards the base with histories of dyspnoea occurring spontaneously or possibly due to weather changes. Some raised sputum, mucous or muco-purulent, in varying quantities. An opportunity was offered to test six for eosinophilia and a sensitiveness to tuberculin. These were all negative to the latter and the blood of five showed that eosinophiles had increased to four, or nine per cent. Three were females, nine were males.

Concerning the living tuberculous in the county, our surveys show 77 on our lists May 1, 1919, which has been increased to 120 on May 1, 1920. The ratio of dead to living has been increased from one to three and a half to one to five. This is an unfavorable comparison with the ratio of 1:20 attained in the Framingham Health Demonstration work, but when one compares the death rate of these two districts, it is found that the rate on the Cape is so much less, that one wonders what their normal ratio between dead and living cases should be, and just to what extent the death rate might reflect the size of the multiplier used to estimate this number of living active and latent cases.

Congested living conditions, age, incidence, dusty occupations, sex, nationality, and alcohol, all contribute as determining causes affecting the size of this multiplier, in that they afford opportunity for the most susceptible to the disease to exist in centers best suited to their decline and to the infection of others. When all these factors become 100% effective, there is no doubt that the Framingham multiplier will be large.

Applying them to conditions in Barnstable County, one finds that it suffered a loss in population from 1900-1910; that there are no congested living conditions of moment except in Provincetown; that there are no dusty occupations; that the prevailing nationality is Anglo-Saxon and a Latin-Negro type—the Portuguese.

The town of Provincetown offered the greatest number of examinations,—11, and among these were found likewise the greatest amount of tuberculosis,—13, all of whom were Portuguese but one. This accords with the higher death rate Provincetown has always had compared with the remainder of the Cape, and justifies the recommendation made in the last survey by Miss Billings that a tuberculosis clinic be established there.

The average age of people dying from tuberculosis is 34 years, according to Lillian Brandt. In Provincetown, it is 31 years; but in Barnstable County, minus Provincetown, it is 42 years. The average of the living tuberculous Portuguese is twenty-seven—which is low compared with thirty-eight years—the age of the Anglo-Saxon stock—up-the-Cape.

The old idea that dark-skinned races are more susceptible than the fairer skinned is again borne out, but it could also point to the concongested living conditions of Provincetown unlike any other town on the Cape. Moreover, the age-incidence among the Portuguese tuberculous is consistent and would suggest strongly that it was drawn from a population that was normal rather than from one suffering a withdrawal of those age-decades when tuberculosis is most prevalent. In support of this are the statistics concerning the loss of Cape population from 1900-1910, the presumptive cause of which fact is that the younger adults, excepting those in Provincetown, seek employment in the commercial centers of the State.

So far our statistics seem to have pointed in a direction that conveniently gives us ground for an alibi explaining why we have not approached more closely the figures of the Framingham Demonstration. More data and statistics might change our conclusions—especially the figures of the 1920 census.

One benefit stands out plainly,—that the service was instrumental in bringing twenty-two patients to the local sanatorium, one-half of whom paid their own expenses. Some of these would have come anyway, but at any rate, due to the service, they came earlier. Without this additional number, our average census would have run noticeably lower.

Our work with the local boards of health relative to children is encouraging but slow because there are so many—15 in the county. It is on the basis that while there is much infection from tuberculosis in childhood, there is much less morbidity; that there is considerable that we do not know about the threshold of tuberculous disease—especially in childhood; that the statements of reliable investigators

connect many tubercular adults with scrofulous disease in childhood.

We try to detail for them the facts concerning any children coming to the clinic whom we believe ought to be admitted to the sanatorium. As a rule, these recommendations are acted upon and the officials are brought to consider the advisability of sending, for short observation, certain infected children, who show indications that tuberculous disease is tending to develop. This is another step toward the practical realization that "an ounce of prevention is worth a pound of cure."

For the work during the ensuing year 1920-1921, there is naturally to be expected an increase in the number of examinations, providing our work during 1919 has been considered of any value. We ought to receive more cooperation from the physicians and boards of health, and from two more clinics operating soon in the towns of Orleans and Chatham. An x-ray equipment will be at our disposal; also the benefit of a local organization on public health lines will be felt in its assistance to secure a certain amount of publicity, and to establish in the minds of the people that this is a necessary development of preventive medicine in stamping out tuberculosis.

The cost of the experiment has approximated $1,000.—$5.50 per examination, or $29 for each case of tuberculosis examined. As for this $29, we are entirely at sea in judging it as a cost, because we have no standard. Its redeeming feature is that it seems cheap as compared to putting the average tuberculosis case through a sanatorium with untoward results. But time will develop a standard cost as the Framingham idea is put into operation under other conditions and their results present themselves for comparison. However, until consultation service is lifted out of the realm of experimentation any cost is bound to be justifiable if within reasonable limits and if no criticism can be found in the detailed items. Furthermore, a certain amount of time must elapse to permit judgment regarding the actual benefit derived from our early diagnoses, from the standpoint of infectivity and arrest. To maintain any high degree of effectiveness in these directions means that we must still reckon with the changing of habits and human nature. Simply telling an individual that he has tuberculosis does not always avail much, hence together with it should continue to go education and appeal.

DISCUSSION.

Dr. P. Challis Bartlett, Framingham: The Consultation Service in Barnstable County has, I believe, demonstrated that this kind of service is applicable to a country community, and will materially increase the number of known cases of tuberculous disease in such communities. The Consultation Service on the Cape has helped to keep the County Sanatorium at Barnstable nearly full at a time when many of the sanatoria were caring for less and less patients. As the work progresses in this county it will undoubtedly give us a more correct idea of the number of tuberculous cases in country communities than we have ever possessed before.

In the work of the Community Health and Tuberculosis Demonstration, the Consultation Service has always been a help in the detection of tuberculous cases. The Committee on Appraisal of the Framingham work state: "The most important of all the practical contributions made by the Demonstration is the working out of a plan for medical consultation service, which is clearly the most promising means yet devised for securing a reasonably complete knowledge of the amount of tuberculosis existing in a given community. The Consultation Service has attracted wide attention throughout the country."

When the Framingham Demonstration started there were 27 known cases of arrested and active tuberculosis on record in Framingham. While there were under observation 40 cases during the year preceding the Demonstration, the number under observation during the first year the Demonstration started was increased to 185 active and arrested cases, approximately one-third of these being discovered through the Consultation Service.

During the first year of the Demonstration of a total number of cases reported, 44 per cent. were advanced, while during the second year only 16 per cent. were advanced. During the decade preceding the Demonstration there was reported an average of 13 cases of tuberculosis a year. During the first year of the Demonstration this number was increased to 59 and since that time there have been over 30 cases reported each year. This service as applied to different types of communities will naturally be modified to the type of community and the special problems in each individual case. In the communities where it has been tried, the interest and stimulation for the early discovery of tuberculosis has noticeably increased.

Dr. Eugene R. Kelley, Boston: I would like to add one more word. It is my belief that nothing has been done for at least a decade of as much value in tuberculosis work as this Demonstration that has been made in the Cape region. I think it is something that the State Tuberculosis Society can always look back to with pride. I almost feel it is going to mark an epoch in the practical method of getting at

and discovering tuberculosis. I hope all members of this section, if they do not have it clearly in mind, will get out their map and look carefully at the Cape and see what it means in distance and area, and then realize that the population is not much over 30,000 for the whole territory; and then begin to think over what that would be in terms of a more compact community. Then only will they begin to realize what a result has been accomplished. That is what I had in mind in my first discussion. Possibly my friend, Dr. Stone, misinterpreted what I said. I agree with him. I do not feel that the money expended in institutions has been wasted. I do not feel that it was a mistake to start with the institutions, but I do feel, and feel most deeply, that we have got a certain number of beds that are so often kept for a year, a year and a half and sometimes five years, by the old "stagers" that cannot be made much if any better, while these beds might be used for a period of six months at a time for early stage patients who could be turned back as self-supporting. That is why I feel that these two things,—a deliberate, progressive survey, along the lines Miss Billings brought out, combined with itinerary consultation service, that has been carried on for the last few years, are more productive of good than anything I have known for a long time in tuberculosis work.

Occupational Therapy for the Tuberculous.

By F. H. Hunt, M.D., Mattapan, Mass.,

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In some minds there seems to be more or less confusion as to the meaning of the term occupational therapy, its object, and how it applies to the tuberculous hospital patient.

Today various allied terms are being used, such as occupational and vocational therapy, ward occupations, occupation diversions, and reconstruction work.

Formerly, and especially since the early nineteen hundreds, under the less euphonious names of graded, graduated, or controlled exercise or labor, this supplementary method of treatment constituted a part of the routine in many of our hospitals and sanatoria.

It may be well to give a brief summary of the history and rationale of exercise as relating to the consumptive.

Some two hundred and fifty years ago Sydenham advocated horseback riding and its associated fresh air as a cure for phthisis. His prescription was entirely empirical and based only upon his observation of the good effects obtained.

Again, as early as 1840, Bodington of England, in his "Essay on the Treatment of Pulmonary Consumption," recommended the use of fresh air, good food, and exercise.

It remained for Brehmer, the father of sanatorium treatment, to push exercise to the forefront, using as fundamental in his treatment, long hours of walking, strenuous mountain climbing, and deep breathing exercises. Later, his famous pupil, Dettweiler, noting the disastrous effects of these excesses in many of his preceptor's cases, became the apostle and champion of absolute rest, opening in 1876 his sanatorium, introducing for the first time the present day reclining rest chair and omitting from his schedule of treatment all but the very lightest grades of exercise.

The great majority of physicians, following Dettweiler's lead, instituted the rest cure as the dominant feature of sanatorium treatment and this idea prevailed up to the early years of this century.

In the meantime Koch, in 1890, had announced his tuberculin experiments and proposed its use as the long sought for cure. The whole medical world took this up immediately and the injudicious use of tuberculin by men of good, as well as those of ordinary, reputations soon brought about a strong prejudice against its employment, many abandoning it as a therapeutic measure, others holding fast to their opinions that, in tuberculin they had, not a specific, but a definite aid towards the arrest of the tuberculous process, believing that it caused the production of antibodies in the tissues, some of an antitoxic nature, others that stimulated the formation of walling off fibrous tissue.

In 1903 Wright, in his paper on vaccine therapy and the opsonic index, showed the absolute necessity of proper dosage in vaccines, and the use of tuberculin again became popular. Thus we see that tuberculin therapy was the first attempt at rational tuberculosis therapeusis based on scientific grounds; in this case, the production in the tissues of demonstrable antibodies specific to the *toxin* of the bacillus but not, as we would wish, to the bacillus itself. It is common knowledge that an overdose of tuberculin produces the same symptoms in the patient that are present in clinical tuberculosis, such as malaise, weakness, loss of appetite, elevation of temperature, acceleration of pulse and increased expectoration. Properly graduated

doses, on the other hand, many stimulate the production of antitoxic bodies to such a degree that large doses may finally be borne and no clinical evidences present themselves.

As we go into the problems of immunity we find that active immunization is dependent upon the action, not of dead, but of living, bacteria upon the tissues of the body and, in response to the stimulating influence of these bacteria or their products, the production of antibodies of various kinds which in time offset or neutralize the invading organisms' destructive agents. The theory of autoinoculation as elaborated by Wright is based entirely upon this production of protective antisubstances.

It is thought that the symptoms in clinical tuberculosis are caused by excessive autoinoculation at the seat of the lesion, and that an excess of toxin is thrown into the circulation, as in an overdosage of tuberculin, causing the rise in temperature, etc., and that the subsequent return to normal is due to the presence of the above mentioned antibodies, produced in response to bacterial stimulation; and it is also thought that in many cases that this autoinoculation may be controlled by a careful regulation of rest and exercise.

However, it was not until 1908 that Paterson, of Brompton Hospital, England, working with Inman, developed a system of graduated labor, and established a definite scientific relation between autoinoculation following exercise and the subsequent condition of the patient. In 1911 Paterson published his book, "Autoinoculation in Pulmonary Tuberculosis," in which, among other things, he gave very elaborate tables and explicit directions as to the employment of systematic graded work. He gave very definite warning of the dangers of excessive autoinoculation leading to overpowering autointoxication, but, as with tuberculin, the value of his method has been questioned and denied by many.

In the last decade many modern sanatoria have incorporated controlled exercise in some form as part of their treatment, not for its psychological effect alone, but as I have gone to some length to show, for its true rational therapeutic effect. To quote from King in his excellent monograph, "If exercise or labor be introduced into the treatment of tuberculosis merely as a diversion for the patient, as a hardening process, as a means of stimulating the appetite or forming a healthy state of mind and digestion, or worse still, as an economic factor, without the vitally important comprehension of its dominant function, that is, by the production by autoinoculations of specific poisons, then the system is almost surely doomed to failure. But, when the fundamental principle of its action is kept conspicuously in view, its therapeutic value has been repeatedly demonstrated, and without doubt it forms one of the most potent factors in the therapeutics of tuberculosis." With the establishment of the more recent army tuberculosis hospitals, occupational therapy received a tremendous stimulus. Report after report was published concerning the favorable results obtained. At New Haven as many as thirty-five reconstruction aids were employed at this work, instructing the eligible ones among 450 patients. It is not the graded labor therapy of Paterson's but is similar to, though on a much larger scale than, occupational work at Trudeau, begun thirteen or fourteen years ago and inaugurated, as Lawrason Brown states, because the patients were suffering from ennui, and wished something to do. There, similar, though not so completely equipped, work shops for handcrafts as used in the army were the means employed.

At the Atlantic City meeting of the National Tuberculosis Association last June, Colonel Billings, in his discussion of occupational therapy in the Army, spoke of the need of mental and occupational therapy, and finally that the almost universal testimony of hospital personnel and patients places occupational therapy in the treatment of tuberculosis as of the greatest psychological and material value.

Colonel Nichols quoted Colonel Bushnell as insisting that a fourth great factor, psychical, be added to rest, food, and fresh air in the treatment of tuberculosis.

Captain North of the Oteen Hospital in a very excellent paper stated that it was his unqualified conviction that the paramount value of reconstruction work was the psychic value. Again, that 80% of all efforts are indirectly curative or psychic, and in conclusion, that it could not be too emphatically stated that the primary means of treatment for tuberculosis was medical and that the principal direction reconstruction work should take was the psychic one.

There is nothing of graded exercise in these reports, though we know that exercise in these

hospitals was controlled and more or less graduated.

The term occupational therapy must have a definite meaning if we are going to use it, and from the foregoing it is evident that its fundamental object is to favorably influence the patient's mind through occupation. In some forms of mental disease this treatment is, of itself, curative. Not so with tuberculosis. Something more than mental status has to be considered. With its many stages, all varying as to prognosis, some utterly hopeless, individual problems as to rest and exercise arise that are very much more complex and very much more important than the kind of entertainment to be prescribed.

The application of occupational therapy in the incipient is a much more simple problem than in the advanced case. Its application in the man with a prospect of five years of life is decidedly less difficult than in the one who will live only three months or less, and don't forget that you may make the latter very happy in his last days nor, on the other hand, that no amount of endeavor in this line will help your man with a wife and six children at home who need his usual weekly wages.

In the early case the hope of a complete arrest, the return to his former occupation, and his so-called man's job are of themselves good mental medicine, but in the far advanced, no such hope may be entertained. Here, occupation for psychic purposes comes into its own. It is with these cases that we are concerned at the Boston Consumptives' Hospital. Such patients will tell you that formerly they simply sat around wondering if meal time would ever come, but now since they are engaged in basket making or the like, they never think of time. Isn't this worth while?

I believe that we know enough of occupational therapy with its effects on the mental or, if you wish, the psychic status of the patient, to incorporate it definitely as a therapeutic aid, by means of which the patient is made more content during his long and otherwise tedious stay at the hospital. It seems to me it prepares the way for treatment, the vehicle, rather than the remedy itself, the syrup in our prescription.

We should always remember that our desired goal is to raise the patient's immunity to its highest possible point and to keep this immunity comparatively high. This means long, weary months of hospital treatment and coincident *morale* building, through occupation, will time and again substitute success for failure.

In our work among the far advanced cases at our hospital, we have for a number of years followed methods approaching nearer to occupational than the graded autoinoculation therapy.

Our activities may be roughly divided into three channels, religious, diversional and occupational. Religious facilities are provided for all denominations. Chaplains are appointed who may be reached at any time, day or night, and I am unable to find a proper means of expressing in measure the value of their services.

Under diversions come many forms of indoor entertainment, some educational, some of no relation to education. Of all our aids in this line, I think that the daily morning and afternoon newspapers, weekly and monthly magazines should occupy first place. These are sold to the patients by one of their number, the latter making his legitimate profit and being the official newspaper man in the controlled exercise class. The hospital furnishes a small circulating library of fiction on each ward, the books being reviewed from time to time, and the fact that they are read is the best evidence of the demand for them. Moving picture shows come next in popularity. The hospital owns a very excellent moving picture machine and efforts are made to procure reels at least once a week, a crowded house being assured. At times songs, dances, and vaudeville acts are contributed by well-wishing friends from the city. Often, especially during the winter months, card parties, progressive and otherwise, are held in the same place, always under the supervision of nurses. A great many of the men and some of the women enjoy playing checkers, chess or cards on the wards. So long as this causes no undue excitement it is allowed. Again, some prefer to play solitaire or the old-fashioned patience, seemingly obtaining as much solace and comfort over a successful solution as the discovery of a rare old edition brings to the book lover. This kind of idle diversion is unhesitatingly condemned by most authors. I cannot feel so strongly on this subject. Just here tobacco smoking should be mentioned. Whatever your individual or collective opinion as to bad effects of tobacco may

be or the tolerance of its use in hospitals, the average tobacco habitué, with or without your permission, is going to smoke. All of us can recall pictures of old men with their pipes in their mouths that have been drawn for us as illustrating the acme of contentment. Card playing and smoking may appear irrelevant in a paper on occupational therapy but they have such a direct bearing on your patient's psychology that they should be considered. At Mattapan smoking is allowed with an endeavor made to prevent over indulgence. Fortunately the very sick bed patients will seldom trouble you in this connection. And while we bear in mind this therapeutic quest and anxiety for our patients' mental contentment, should we forget those examples of perfect psychic equilibrium, the men who worry only about one thing either in this world or the world to come, that thing being the possibility of having to do either mental or physical work.

For several years at our hospital controlled rather than graduated work has been applied in from thirty-five to forty-five selected cases. This work is not hard; in the main, choremen's work,—mopping, sweeping and cleaning for the males; kitchen helpers and ward work for the females. Ten to twelve of the men are instructed and put to work as mail orderlies, this being in the nature of vocational therapy. Some are employed whole and some half time, according to their physical ability, and are paid a nominal salary, the orderlies more than the choremen. The work is not compulsory but is advised as a medical procedure. These patients are under medical supervision of course and should untoward symptoms present themselves, are immediately taken off the work. I am incorporating here a copy of the staff medical report made to our trustees very recently as to the physical condition of our patient orderlies.

There are eleven such:

No. 1. Age, 44; night orderly, full time; far advanced, positive sputum case; cavity in right upper; left upper very moist. Has been working four months, gained four pounds. Feels much better.

No. 2. Age, 41; night orderly, full time; far advanced, positive sputum; extensive involvement in both chests; cavity right upper. Has been working for two years. Gained twenty pounds. Says he is all right.

No. 3. Age, 22; day orderly, full time; positive sputum case; entire right chest involved with cavity in upper lobe; left upper also involved. Is about holding his own, but claims he is much better working.

No. 4. Age, 33; night orderly, full time; far advanced, positive sputum case; massive tuberculosis entire left lung with cavities; right lung in good condition. Has been working for two years Weight unchanged; feels in good health.

No. 5. Age, 30; full time; day orderly; moderately advanced, positive sputum. Has been working for six weeks; was a rank neurasthenic before working. Is wonderfully improved along those lines. His lung condition is much better.

No. 6. Age, 36; full time, day orderly; far advanced, positive sputum; most of the left lung with right upper involved. Has been working eight months and has gained eighteen pounds.

No. 7. Age, 42; one-half time, day orderly; far advanced, positive sputum case; most of left lung with right upper involved. Just about holding his own in weight, and feels much better working.

No. 8. Age, 44; one-half time, day orderly; far advanced, positive sputum; extensive involvement in both lungs. Has been working for one year. About holding his own, but firmly believes that he would go to bed if taken off work.

No. 9. Age, 31; about the same as No. 8.

No. 10. Age, 46; full time, day orderly; far advanced positive sputum case. Whole of left lung and right upper involved. Has been working only three weeks, after having gained eighteen pounds during his previous three months' residence.

No. 11. Age, 21; full time, ward and ambulance orderly; negative sputum, observation case. No evidence of tuberculosis. He is to be discharged June 1.

Those in the other classes of work show like improvement in their physical condition. There still remained in the institution a large percentage of ambulatory and semi-bed patients untouched by these means. Last September, through the good offices and financial aid of the Boston Tuberculosis Association, occupational therapy based along army lines was instituted by the employment of an army trained occupational teacher who should devote her whole time to this work. In a very short time she found that her limit of activity had been

reached. Supervising the work of about forty patients who were engaged in actual production, buying raw materials, finding a profitable market for the finished product, and keeping books on each particular piece of work, was, I imagine, a bit of strain.

At this time the patients, all of the ambulatory type, were engaged in the following work: Reed and raffia basketry, weaving on press board-looms, knitting sweaters, socks and bags; elementary bookbinding, making photo books and blotting pads; bead work, chains, bags, and fobs, silver link chains, wooden toys, chair caning and crochet work.

Some of the men exhibiting exceptional skill in craftsmanship, one of them was chosen to act as a helper in instruction of the slower ones, runnings errands, etc., being given a small salary for so doing. A little later a former Technology student was installed as bookkeeper and record clerk. In this way Miss Emmons, the teacher, had more time for personal and special instruction. During the past winter, in addition to the above work, Turkish rug making and classes in French, English and music have been undertaken in small groups. Light gardening is being attempted by some at this time.

The winter's work having proved so satisfactory from every one's point of view, early in the spring Miss Emmons was given a trained, half-time assistant, also with army experience. She, working among the sicker bed patients, is giving a few of this group the pleasure of creative work. With these the work of course has to be very light and of a kind that may be put down or taken up at will.

In conclusion, then, first, occupational therapy's chief aim is psychic and that, based upon its psychic effect, it is applicable to all stages of tuberculosis, early and late, favorable and unfavorable; each case presenting its own problem; second, that when in occupational therapy controlled exercise is added, an additional purpose has been brought in, physical upbuilding with enhanced immunity; and finally the question, in what percentage of cases does it accomplish the desired object, which in the final analysis is to induce the patient to remain long enough under treatment to receive the maximum benefit thereof?

While most of us firmly believe that our results are most positively beneficial, only massive comparative statistics not yet available can answer.

DISCUSSION.

DR. BAYARD T. CRANE, Rutland: The Rutland Private Sanatorium Association has given its attention for some eight or ten years along the line of meeting the problems of the patient on the patient's ground. It has taken into consideration the fact that the patient often found the life of the sanatorium far from one of happiness and contentment. How far that difficulty in the life of the patient goes in preventing recoveries and saving life I think has had scant attention in the past. In other words, the formula of "fresh air, food and rest," as a slogan in the treatment of tuberculosis (used, perhaps, to inspire the public with the idea of the simplicity of the cure) has had its dire effects. I think that the slogan to a certain extent has epitomized the idea of the profession as to what the proper treatment was and has perhaps kept us more or less blind to the patient's individual problem.

After years of association with the patients of all stages in the public institutions, and with the private patients, it has only little by little dawned upon me that the element of psychasthenia among patients is a very potent and a very prevalent one. I use this word psychasthenia as practically synonymous with our old word neurasthenia. With that as a factor to be overcome in the successful treatment of tuberculosis, one, in the practical management of an institution, has to cast about as to how to compete with this very difficult and very prevalent condition. Our first step was along the line of crafts, simply taught by a craft teacher; but we found that crafts, taught by careful teachers, did not arrive at the goal which we hoped for. In other words, the point of view of the patient was often missed by a person who is interested merely in teaching crafts. Little by little we have tested out the question of occupational diversion for patients, and have arrived ultimately at the conclusion that occupational therapy is useful in from one-third to one-half the cases and cannot be grouped according to the type of case nor to the extent of its severity, but more on their personality. In other words, our conception of occupational therapy as applied to tuberculosis, may be quite different from the application as applied to other diseases.

We strongly urge that the word occupational therapy should be used synonymously with psychotherapy, or at least should be applied as psychotherapy is required. In that field, as Dr Hunt says, it fails to cover the entire requirements of the individual and yet at the same time contributes a very strong aid in the contented control of the patient in the institution for the right length of time. I should say

that occupational therapy, used by and large, could never be hoped to add very much radical curative benefit to much more than five per cent. of the cases, certainly as judged by those who come to the private sanatoria.

There is a phase of occupational therapy which leads to something far better. The after-care of the case of tuberculosis I presume still remains the great problem. The difficulty of fitting the patient for the industrial life which he must lead, still remains the problem in tuberculosis. I am strongly inclined to claim that the most encouraging thing in regard to the practice of occupational therapy is its likelihood of leading up to occupational adaptation of the consumptive. As a definite, constructive plan in our treatment of tuberculosis, occupational adaptation has a great interest for the institutions to take upon themselves. Physicians in the past have mainly concerned themselves with making patients physically fit to face industrial occupation. But that is not enough. With 75% of the cases entering sanatoria being moderately advanced and advanced, it is perfectly evident that the great mass of cases coming to our hands at present are not able to return to their former occupations. It seems to me that our next great step is to try to concern ourselves with adapting the physical condition and the future occupation. We should so interest ourselves in occupation and industry that we can sympathetically assist our patients toward a suitable industrial livelihood. By the fine adjustment of occupational fitness and physical fitness we can relieve after-care problems and prolong lives of our patients. By working toward these ends occupational therapy can serve an important purpose.

Dr. Edward O. Otis, Boston: There is one point which I believe Dr. Hunt did not refer to in his admirable paper and which I think should be borne in mind in occupational therapy, particularly in a state or city institution, and that is that whatever is made by the patients should be something readily saleable, and the amount paid the patient, minus the cost of the material.

It has been mentioned that the Boston Tuberculosis Association was instrumental in initiating this work at Mattapan, and such articles as were made, such as baskets, bead work, etc., were referred to that Association for disposal. It was found, however, that it was difficult to dispose of these things, and the question came up as to what the patients could make which would be more readily marketable. This I think is an important consideration in the planning of occupational therapy, for the patient will obviously take a greater interest in his work if he knows that he is making something that can be readily sold and he will receive the return.

Dr. Timothy J. Murphy, Boston: I think a distinction should be made in the kind of occupational therapy for the various classes of tuberculosis. Dr. Crane's cases evidently may be classed in the more recent type of tuberculosis. This class enters a sanatorium such as Rutland. Of course they are more taken up with their speedy cure. As Dr. Kelley has said, the earlier we get these cases the quicker we get them well. At Mattapan, on the other hand, we have the far advanced cases—the case that has been arrested and reactivated again. In the far advanced stage there is practically no hope for the return of the patient to his former occupation. You can see from a report of the staff, which Dr. Hunt has read here, which Dr. Locke and I have made to the trustees, when these people are given work with financial remuneration—some money coming in—it had helped more than any other one thing. If some type of work could be furnished so that these patients might earn a few dollars and send them to their families it would indeed be an ideal occupational therapy.

Dr. Henry Colt, Pittsfield: I was very much interested in hearing this paper on occupational therapy. I happen to be connected with a very small sanatorium in Pittsfield. We have just recently started a teacher there, mainly in the craft work—the making of baskets and small articles, and I was curious and interested to see how it was going to work out. A few, I think, have taken an interest in it and have gone into it rather intelligently, but I am sorry to say that there are several men who look upon the matter of work as a violation of their mode of life. They feel that they have come there to be treated as sick people and not to work. I think, however, if they see some of the results that will be produced it may stimulate them. To me it is a most melancholy sight to see a dozen or more men sitting around trying to keep warm in the sun and not having anything to do. The psychic element that has been spoken of here is the one that is going to be productive of a tremendous amount of help. I should think.

Dr. H. D. Chadwick, Westfield: I think that it is a very necessary thing in order to get patients interested to see that they get some financial return for their work. Otherwise, many of them will not take part. That really was the secret of the success in the Army hospitals—the fact that whatever they made was saleable at a high price. That is why so many of the soldiers were so keenly interested in the work.

Nutrition Clinics and Tuberculosis.

By William R. P. Emerson, M.D., Boston,
President, Nutrition Clinics for Delicate Children.

The following is a report of nutrition work which we have been carrying on, a second year,

under the auspices of the Boston Tuberculosis Association:*

The Problem. We find, in general, that all children who are habitually seven per cent. underweight, for their height, are retarded in their growth at least one year. These undernourished children are a special problem in tuberculosis work, because there is good evidence that the problem of nutrition is the problem of tuberculosis. If one does not wish to go as far as this statement would lead him, he must admit, at least, that nutrition is an important part of the problem of tuberculosis. Our object in carrying on nutrition classes, with children in homes registered at the Out-Patient Department of the Boston Consumptives' Hospital, has been to get these children well in their own homes by meeting them in groups or classes of twelve to twenty each, once a week, at 13 Dillaway Street, where they are weighed and checked up, to see if they follow directions, which have previously been given them, as regards their food, activities, and habits of living. These children come to us in a few instances through the agency of the tuberculosis nurses, who have been asked to bring in all those who are undernourished. However, of the 189 children, weighed and measured, only a small percentage came from this source. It was found necessary to have our nutrition worker go to the Out-Patient Department Saturday mornings, weigh and measure such children as came in to report, and thus the group was obtained. The following is a report of children under treatment during the past year, including their rate of gain:

Number examined October 1 to June 1	189
Underweight 7% or over	43
Normal weight	146
Overweight	0
Underweight enrolled in classes	33
Malnourished cases less than 7% underweight	7
Total membership of classes	40
Eliminated	5
Range of week's attendance	4 to 33
Average week's attendance	20
Cases carried over from last year	15
New enrollments	25
Boys	6
Girls	34
Monday class	23
Wednesday class	17

The results obtained are almost entirely due to the unusual faithfulness and efficiency of the nutrition worker, Miss Geraldine Garrison who, by her helpfulness in the perplexing problems of these homes, has endeared herself to both parents and children alike.

AVERAGE NUMBER OF PHYSICAL DEFECTS.

	Old Cases	New Cases	Boys	Girls	Total
All defects	6.3	7.3	8.7	6.6	6.9
Naso-pharyngeal ...	2.7	3.0	4.0	2.7	2.8
Av. age ..			10.3	10.6	10.6
Per cent. underw't .			10.8	9.2	9.4

PER CENT. ACTUAL GAIN OF EXPECTED GAIN.

Monday class	239%
Wednesday class	134%
Old	167%
New	206%
Boys	99%
Girls	204%
All	190%
14 cases having 4 or more naso-phar. defects	194%
26 other cases having less than 4	245%
19 cases having each 7 to 13 defects..	172%
21 cases having each 2 to 6 defects ..	206%

100% to 150%	8 cases
150% to 200%	7 "
200% to 300%	6 "
300% to 400%	6 "
400% to 500%	1 "
500% to 600%	0 "
600% to 700%	1 "
700% to 810%	2 "
Less than 100%	9 "
	40 cases

This table shows that despite the unfortunate conditions under which we have worked, members of the classes, made up of children habitually below the normal rate of gain in weight, have been brought up to an average of nearly double the expected weight increase for their various ages. Forty per cent. of the membership have made progress at the rate of more than 200%, and ten per cent. at more than 400% of the normal gain.

We do not consider these results satisfactory, and have been able in a neighboring Out-Patient Clinic to secure an average for the entire class of nearly five hundred per cent., while in another class, conducted under specially favorable conditions, the rate has been 673%.

It is then necessary to inquire why this particular group has been able to make less than half the progress accomplished in the other class.

It may be helpful to state the factors concerned as the four sides making up a parallelogram of forces, which, when properly coördinated, insure for the child the essentials of health, namely, the removal of physical defects, securing home control, preventing overfatigue,

and securing good food and health habits. On the one side, are those forces concerned with the home; on another, those coming under medical care: a third includes those of the school; and the fourth, the child's own interest.

On the side relating to the home, we have found the lateness of the hour at which classes are held makes it practically impossible to secure the usual coöperation we have had from mothers. The children have been in school all day, and the mothers, who must walk considerable distances, are not able to return home until, in many cases, as late as seven o'clock, thus interfering with the evening meal of the family. Since March, however, one class was transferred to the Elizabeth Peabody Home, where the attendance of both children and mothers was better. We have not been able to get all the mothers to attend regularly, but where their interest was aroused by visits to the clinics, and by visits of the nutrition workers to their homes, home coöperation has been fairly well obtained.

We have found the homes in the tuberculous group to be the most disorganized of any homes we have seen in any situation. The reason for this is evident. It is the natural result of long continued sickness of one or more members of the family. Home habits become irregular. Often the food necessary for good growth has been given the sick member of the family, and the factor of overfatigue is in special evidence.

On the second side, the medical work was to examine these children to discover all defects, to give directions to have these removed, and to help conduct the classes. However, only half of the necessary adenoid and tonsil operations have been accomplished, partly, from difficulty in getting the children operated upon, as most of the hospitals have their work dated sometimes two months ahead; and we find it necessary that these children be kept over night at the hospital after the operation in order to insure safety.

In tuberculosis work there seems to be a special tendency for the physician to look for the signs of tuberculosis, at the expense of the general physical examination. The physical defects in this group averaged nearly 15 per cent. more than that found elsewhere, and it has been surprising what a large number of adenoid and tonsil operations have been found necessary.

In regard to the child's own interest, it has been remarkable how keen these children are to become well and strong. Even late in the spring, they came in with almost an attendance of 100%, even after school, when the temptation to be out of doors and at play was very great. There is, however, a constant drawback, due to the fact that the children who attend the clinics are said by their mates to have the "pip"—their name for tuberculosis.

Our chief difficulty, however, in this work is still the school program. We have been able to get only about 50% of these children relieved from school work, even for a short time, two to four weeks in the school year, and when so relieved they have been obliged to make up this work. In the case of one little girl, during the time that she was excused, her home lessons were such that we found her sitting up until eleven o'clock at night, in order to get her work done. The attitude of the school authorities has been, with a single exception, that health is more than schooling, but the working out of our school system is the reverse of this. When the particular question has arisen as to whether one of these undernourished children should be relieved of school work, the decision has been in favor of schooling, that is, the child must continue his attendance or else fail to be promoted. Even in the case of children who have been to the sanatorium at Westfield, or in the hospital with active tuberculosis, they have been compelled to carry out a school program designed for well children, although on the waiting list to go back to the sanatorium. The authority for excusing these children rests with the school principal, whose point of view too often is that unless these children are sick in bed, they are just as well as other children, especially if they have attended our classes, where their condition has temporarily improved. Two of our most severe cases of malnutrition, I find, are compelled to attend summer school, in addition to being refused any relief from the work during the past year. An argument of the school authorities has been that the school is more healthful than the street or the home. However, we have not found this to be the case. Children can be made to gain rapidly if they can be relieved of school pressure from half past ten to twelve in the morning, when they can go home and get a light mid-morning lunch and a rest period. This break in the day prevents overfatigue and allows the child to gain,

ensuring that during his periods of activity and work he shall be at his best and have opportunity to recuperate by means of rest and lunch periods before he is "run down." His failure to gain while in school does not seem to be altogether from the extra work imposed upon him, but from the stress and tension of the classroom. A Chicago principal actually reports higher marks in the studies of one of our nutrition classes even on the lessened time for work.

Another argument of the school authorities is that school inspection should take care of this group of children. That it does not do so is evident from the large number of these malnourished children, which, conclusive evidence shows, remains at about 30%.

School inspection in Boston compares favorably in many respects with the best work done in any of the cities. In the detecting of malnutrition, however, it has constantly run below such cities as New York and Philadelphia, for instance. But a school physician who has two to five thousand children under his care can do little more than meet the minimum requirement, namely, to protect the school from contagious diseases, and suggest the correction of such physical defects as he may discover on such rapid examination as he can make, without the removal of clothing. Such rapid inspection cannot discover malnutrition, which even in hospitals will escape the specialist in children's diseases, because malnutrition is not a medical diagnosis. The usual physical examination discovers defects in vital organs, but does not take into consideration the essential physical signs of malnutrition.

If the school physician works under such serious conditions of disadvantage, how can we expect the school principal, who alone has the authority to grant the relief essential to restoring these children to health, to consider this relief as other than a special favor to be set aside that more time may be spent upon school work?

The result is that the city is spending money on requirements which make the children sick, and then appropriates more money for sanatoria in which they may be made well.

The Nurse. The nurses employed by the organization have not been able to assist to the extent we consider necessary to success. As a class, their training can be compared favorably with that of any other group of nurses. However, we must remember that the training of nurses is mostly for bed-patients, rather than for nutrition work, and the demands made upon the visiting tuberculosis nurse are unlimited; therefore, it is easy to understand her point of view when she is asked to assume any new duties in addition to her already crowded schedule. She is apt to consider it a fad that will pass and, therefore, unless her directions are definite, and she is relieved of other duties of less importance, she does not become a help in this nutrition work. From out point of view, more than 50% of the work done by visiting nurses is sheer waste. The conscientious visiting nurse is called upon to do so much work, with no measure for her results, that the task becomes discouraging. This explains why in many of these families nurse after nurse has made visits and secured practically no results.

Conclusion. The problem of tuberculosis is for the most part the problem of nutrition. If children can be made well in a sanatorium, they get health; but if they can be gotten well in their own homes, they get health, plus health education, plus character. Nutrition work, which covers a new and hitherto neglected field in medical work, must be carried on with proper authority. It cannot fit in as an adjunct to other programs, but other programs must be adjusted to fit the problem of nutrition, which is the fundamental problem of tuberculosis. In this work, during the past year, we have shown that we can get children not only to come up to the normal rate of gain, but double it, even under the discouraging circumstances we have mentioned. With the proper coöperation of the four factors that safeguard the child's health, namely, the home, the medical work, the child's own interest, and the school, all these children should rapidly be brought up to normal health. To bring them up to normal health is an opportunity for rehabilitating the whole family and adjusting it to its proper relation in the community.

DISCUSSION.

DR. H. D. CHADWICK, Westfield: I wish we had time to spend in discussing this paper of Professor Emerson. There is nothing more important than the subject of malnutrition in children. The sanatoria, by statistics, by analysis of condition of discharged patients, show that only about one-third of the discharged adult patients from sanatoria became perma-

neatly useful. I do not believe we can do anything better than that as time goes on. We must attack the problem in other ways—first by discovering the early cases. The sanatoria do not get them early enough and they do not stay long enough. Then we do not begin early enough to find them. We have got to begin in childhood to prevent the development of the disease instead of putting so much effort on curing the disease after it has once become established. The work of Dr. Emerson deserves to spread and become universal.

One thing I would like to say about the school. We find at Westfield that a child can go two hours a day and keep gaining, in the sanatorium school. The same thing could be done in public schools provided they are adjusted to meet the physical defects of the children. The children could then rest at home in the afternoon.

Book Reviews.

Textbook of Chemistry. By R. A. Witthaus, A.M., M.D. Seventh Edition. Revised. New York: William Wood and Company. 1919.

The general plan and purpose of the seventh edition of Witthaus's *Textbook of Chemistry* remains the same as in previous editions. The book is intended primarily for the medical student, for use both in preparatory school and throughout his college course. The introduction explains the general properties of matter, the special properties of solids, liquids, and gases, some physical actions of chemical interest,—such as heat and electricity,—and various chemical phenomena. The section dealing with inorganic chemistry aims to give the student not merely a vast supply of isolated facts, but the fundamental principles of chemistry, so that his mind may be trained to reason out problems for himself. The typical elements, hydrogen, oxygen, and their compounds are discussed: and the properties of elements which form no compounds, and acidulous, amphoteric, and basylous elements are analyzed. The section on organic chemistry is arranged with regard to the most complete information on the relationship of substances. The principles of organic chemistry are deemed particularly important by the author because of the close connection of this subject with physiology and modern pharmacy. In this section, equations showing the Grignard reactions have been introduced. In the present revision, sections on Physics and Physiologic Chemistry have been omitted, because special textbooks on these subjects are readily available. Where it has been necessary, new material has been added throughout the book. Medical students will find this volume a valuable textbook; the subject is systematically arranged and is presented in the clearest and most comprehensive form.

The Organs of Internal Secretion. By Ivo Geike, M.D., M.R.C.S. New York: William Wood & Co. 1919.

The purpose of this volume, *The Organs of Internal Secretion*, is to present a short survey of the organs of internal secretion, their diseases, and the uses which may be made of preparations of the hormone-producing glands and of organic tissue generally. The usefulness of the book is indicated by the appearance of this second edition only a little more than a year after the first publication. This edition has been revised, and there has been added a chapter discussing the relation of the internal secretions to functional nervous disease. The characteristics, secretion, functions, and disorders of the thyroid and parathyroid glands are considered: and the etiology, symptoms, prognosis, and treatment of exophthalmic goitre, and the characteristic features of thyroid deficiency are enumerated. The structure and physiological functions of the pituitary gland and methods of treating its disorders are discussed. The adrenal glands and the clinical conditions of hyperadrenia and hypoadrenia, the pancreas, and the internal secretions of the sexual and digestive organs are described. The author summarizes the therapeutic value of organic extracts and expresses the belief that organotherapy offers a promising field to the medical profession.

Advanced Suggestion. By Hayden Brown, L.R.C.P. New York: William Wood & Co. 1919.

The purpose of this volume on *Advanced Suggestion* is to bring to the attention of the profession certain views which the author believes will be of great value to the therapeutic endeavor of the future. He explains his method of treating disorders by neuroinduction, and contrasts it with hypnotism. Examples are cited of cures which have been made by this treatment: they include neurotic disorders, such as insomnia, hysteria, epilepsy; disturbed conditions of urination and of the generative organs: and various forms of psychoses, such as dementia praecox and melancholia. The author claims to have restored by suggestion the functions of smell, taste, hearing, sight, and color-blindness, and to have corrected, also, disorders of the alimentary tract, of the heart and circulation, of gland functioning, pulmonary diseases, gynaecological difficulties, and criminal inclinations. The author's claims for the power of suggestion are great: the future will determine his ability to convince his readers of the status of neuroinduction in medical science.

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OBSTETRIC PRACTICE IN THE STATE.

THE JOURNAL has reserved for special comment the letter of Dr. Charles Malone, published on September 2nd, regarding the mortality of childbirth, because it contains a plain statement of fact and a clear suggestion for a remedy of existing conditions.

The first two paragraphs of this letter read thus:

"It does seem to me that an unfair comparison was made in your editorial of August third in regard to the considerably lower mortality of maternity patients treated by Harvard students at the Lying-In Hospital and those treated throughout the State by the profession.

"As I understand the situation, patients register at the Lying-In Hospital, are examined; the cases that are complicated by disease or those cases which promise to be hard are taken into the Hospital; those that are normal are delivered outside by the students."

With this view the JOURNAL agrees absolutely. It wants to see the medical profession of the State put in just as advantageous a position as are the Harvard medical students of today. It wants to see the general practitioner caring for the normal case, but it does not wish to see the general practitioner left to battle alone, unprepared, and under most disadvantageous conditions with the abnormal case.

The first requisite is that the abnormal case be detected beforehand. The need of this both the public and the practitioner must recognize in greater degree than at present. For this reason great emphasis has been laid on the need in any proposed legislation of requiring a patient to apply for maternity aid a sufficient number of months before the date of expected delivery. But in how many communities throughout the State will this make material difference at the present time? Does not the need lie rather in pregnancy clinics, in maternity hospitals, and in the specially trained obstetricians who can act as consultants and advisers for the general practitioner? If such clinics and consultants could be established throughout the State, just as they are now established for tuberculosis, would not the general practitioner be placed in as advantageous a position as are the medical students? We do not for an instant maintain that the students are as well qualified to care for the patient as are the physicians, but we do want to see the handicap of the physician taken away. We do not want to hurt his practice. The State consultant in tuberculosis is to help him. The obstetric consultant should help him, and relieve him of much anxiety and strain.

The JOURNAL feels that the ominous and steady increase in the maternal death rate will impel the Legislature to some definite action. As physicians, we must give advice as to how existing conditions may be improved. The JOURNAL asks for further discussion through its columns. It feels that it is futile to ask that no action be taken. If action is to be taken, two avenues are open. There is a very strong sentiment throughout the State for direct financial aid to poor mothers. There is another sentiment for treating the question of maternity aid as a public health problem, making the granting of financial aid an object only where it will better the health of the patient. No bill yet presented meets the health problem entirely satisfactorily.

Unless we as physicians can agree along general lines the decisions will be made independent of us.

THE FORMULATION OF A STANDARD SANITARY CODE FOR RAILWAY CARS.

An important advance toward preventing the distribution of disease has been made by the formulation by various national health agencies of a standard railway sanitary code. The work was begun originally by the committee of health and medical relief of the United States Railroad Administration, and a plan was submitted to the Surgeon-General of the United States Public Health Service to be brought into accord with interstate quarantine regulations. The code has been approved by State and Provincial Officers of Health and recommended to the several states of the Union for legislative action.

Public Health work has been made difficult because of the ease with which travel is accomplished and the wide radius of individual action. The fact that there has been no uniformity of regulations within the different states and no established custom prevailing over wide areas has been a serious handicap in controlling infectious diseases. The proposed sanitary regulations will tend to eliminate the danger of distribution of disease. Any person known or suspected to have plague, cholera, smallpox, typhus or yellow fever will be forbidden to apply in person or through some one else for transportation by a common carrier; transportation will be refused such persons. For cases of diphtheria, measles, scarlet fever, cerebrospinal meningitis, poliomyelitis, mumps, whooping cough, influenza, encephalitis, pneumonia, septic sore throat, rubella, or chicken pox, a separate compartment will be required which will provide an accompanying nurse and be subject to special care, including the disinfection of dishes and the destruction of sputum. Further requirements will be made for cases of typhoid fever and dysentery. Patients with leprosy must obtain official permits to travel. Tuberculous persons must have means of caring for sputum and be provided with gauze or other material with which to cover the mouth while coughing. Conveyances or compartments must be cleansed thoroughly before being used again, and bedding, blankets, and linen must be laundered or disinfected before being redistributed.

The proposed sanitary code offers suggestions for controlling water and ice supplies, for the cleansing of railway cars or conveyances while in service, and also for the regulation of sanitary conditions at railway stations. Although in some instances railway companies have established on their own initiative sanitary codes not unlike the proposed standard code, the universal adoption of standardized regulations is necessary both for the protection and for the health education of the public.

MEDICAL NOTES.

Appointment of Dr. Helen MacMurchy.—Dr. Helen MacMurchy of Toronto has received an appointment as director of the Division of Child Welfare in the Federal Department of Health, Ottawa.

Collection of Type Cultures at the Lister Institute.—It has been announced in *Nature* that the British Medical Research Council has established recently at the Lister Institute of Preventive Medicine a national collection of type cultures from which biologists and bacteriologists may obtain authentic strains of recognized bacteria and protozoa for use in scientific work. Dr. J. C. G. Ledingham is in charge of the work. There will be collected and maintained bacterial strains from all departments of bacteriology—human, veterinary, and economic. The members of the staff are directing their efforts at present particularly towards the securing of fully authenticated strains responsible for or associated with disease in man and animals.

War Memento for American Surgeons.—Announcement has been made in *The Medical Press and Circular* that as a memento of the work done in coöperation by American and British surgeons during the war, a number of the latter have had made a silver-gilt mace, which is to be presented to the American College of Surgeons (which includes Canada as well as the United States).

The mace is the work of a well-known worker in metal, Mr. Omar Ramsden. A surgeon's mortar dug up in a Salonika trench was the model for the head, which is surrounded by maple leaves and American eagles. The badges of the British and American Army Medical Corps and the serpents of Æsculapius are prominent, the name of Philip Syng, the father of American surgery (who was at St. George's Hospital be-

fore he went across the Atlantic), is introduced, and the roll of subscribers will be engraved in due course. An inscription on the mace reads: "From the consulting surgeons of the British Armies to the American College of Surgeons in memory of mutual work and good fellowship in the Great War."

WARNING AGAINST COMMUNICABLE DISEASES.—In the issue of the *New York Times* for August 8, it was stated that the Department of Health called attention to the decision of the Nebraska Supreme Court to the effect that a physician is not compelled to maintain secrecy in the case of communicable disease when the health of other persons is endangered by so doing. In the case referred to, the Court granted a verdict in favor of the physician who, after advising the patient to remove himself from contact with other persons and to isolate himself, warned an exposed person of the danger. The following opinion was issued by the Court:

"In making such disclosure a physician must also be governed by the rules as to qualifiedly privileged communications in slander and libel cases. He must prove that a disclosure was necessary to prevent spread of disease; that the communication was to one who, it was reasonable to suppose, might otherwise be exposed, and that he himself acted in entire good faith, with reasonable grounds for his diagnosis and without malice."

AMERICAN CLIMATOLOGICAL AND CLINICAL ASSOCIATION.—The following officers were elected at the annual meeting of the American Climatological and Clinical Association: President, Dr. Carroll E. Edson, Denver; vice-presidents, Dr. Nelson Estes Nichols, Portland, Maine, and Dr. Gordon Wilson of Baltimore: recorder, Dr. Cleaveland Floyd, Boston. Dr. Edson is a former editor of the JOURNAL.

MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.—At a meeting of the American Public Health Association in San Francisco on September 13-17, the following subjects will be considered: Relative Functions of Official and Non-Official Health Organizations; Western Health Problems; Narcotic Control; Food Poisoning; Organization for Child Hygiene; Mental Hygiene; Health Centers. These subjects and others will be distributed among the following ten sectional groups: General Sessions; Public Health Administration; Laboratory; Vital Statistics; Sociological; Sanitary Engineering; Industrial Hygiene; Food and Drugs; Personal Hygiene; Child Hygiene.

PARIS FACULTY OF MEDICINE.—It has been reported in *The British Medical Journal* that professors of the Paris Faculty of Medicine have been placed in two classes according to their seniority, those in the first class receiving a salary of 25,000 francs and those in the second class a salary of 23,000 francs. By a recent ministerial decree Professors Richet, Pouchet, Hutinel, De Lapersonne, Gilbert, Roger, Nicolas, Ribemont-Dessaignes, Quénu, Prénant, Widal, Chauffard, and Weiss have been put in the first class, and Professors Delbet, Marfan, Hartmann, Bar, Marie, Broca, Teissier, Desgrès, Lejars, Achard, Robin, Legueu, Letulle, Couvelaire, Carnot, Besançon, Vaquez, Dupré and Jeanselme in the second class.

INCREASE IN MEDICAL STUDENTS IN GERMANY.—It has been reported that there is at present an extraordinary increase in the number of medical students in Germany. Whereas in the summer term of 1907 there were 7,500 and in 1914, 15,660, in 1919 their number exceeded 19,000. As the number of medical men in 1913 was 34,000, it may be calculated that there will be approximately 48,000 in 1925. Female students and practitioners, whose numbers are constantly increasing, are not included in these figures.

PROPOSED INSTITUTE FOR THE STUDY OF TROPICAL DISEASES.—As a memorial to the late Major-General William C. Gorgas, former surgeon-general of the United States Army, it has been proposed that an international institute for research in tropical diseases be established at Panama. Panama has been chosen as the location for the proposed memorial because of the fact that General Gorgas's most noteworthy health work was accomplished in that country. It is hoped that the sanitary work so far advanced during the life time of General Gorgas may be continued by means of study made possible by such an institute. It has been announced that the Panama Government is willing to donate the St. Thomas Hospital for the use of the institute.

ALL-AMERICAN CONFERENCE ON VENEREAL DISEASES.—An All-American Conference on Venereal Diseases is to be held in Washington,

D. C., on December 6 to 11, 1920, under the auspices of the following organizations: The United States Interdepartmental Social Hygiene Board, represented by Dr. Thomas H. Storey; the United States Public Health Service, represented by Assistant Surgeon-General C. C. Pierce; the American Red Cross, represented by Dr. Livingston Farrand, and the American Social Hygiene Association, represented by Dr. William F. Snow. The conference will deal with administrative and research problems, and will consider the attack on venereal diseases from the different aspects of medical measures, enforcement of repression and protection laws, sex education, the provision of recreational facilities. An attempt will be made to work out a feasible three-year program for each of the countries of the western hemisphere. Dr. William H. Welch, of Johns Hopkins University, is president of the conference. Preliminary organization is in charge of Paul Popenoe. The headquarters of the conference are at 411 Eighteenth Street, N. W., Washington.

The Preparation of Standards for Rat-Proof Houses.—Announcement has been made that plans for radical changes in the construction of business buildings, dwellings, and wharves are being drawn up by the United States Public Health Service as part of a nation-wide campaign for rat extermination. Health officers from various states and the larger cities, at a conference in Galveston and Beaumont, Texas, to study bubonic plague and rat extermination, recommended to Surgeon-General Hugh S. Cumming that standard specifications for rat-proof buildings be drawn up by the Public Health Service. These are to be furnished to the different states and cities in order that they may be incorporated in the building codes throughout the country.

"While bubonic plague is under control in this country, there will always be scattered infection until the rat can be exterminated," said Surgeon General Cumming. "The most effective measure is permanent rat proofing of all buildings. Plans for this may easily be incorporated in any new construction. While the Public Health Service can concern itself directly only with the problem of plague prevention, there is an important economic problem that enters into this situation, due to the fact that at the present time, according to authoritative estimates, there is one rat for every one person in the United States. To maintain this huge number of rats costs the people of this country approximately one cent per person every day for rat food, an intolerable and unnecessary burden for the people to carry."

Boston and Massachusetts.

Week's Death Rate in Boston.—During the week ending September 4, 1920, the number of deaths reported was 195 against 183 last year, with a death rate of 13.59 against 11.98 last year. There were 54 deaths under one year of age against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 21; scarlet fever, 11; measles, 8; whooping cough, 26; typhoid fever, 4; tuberculosis, 37.

Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 3; typhoid fever, 1; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 1; whooping cough, 1; tuberculosis, 13.

Included in the above were the following cases of non-residents: Diphtheria, 1.

Infantile paralysis cases, 22; deaths, 9, non-residents: cases, 7; deaths, 3.

The Harvard University School of Medicine.—The Harvard University School of Medicine has received $350,000 from the Rockefeller Foundation for the development of psychiatry, and $300,000 for the development of obstetric teaching.

Infant Mortality in Massachusetts.—An analysis of the infant-death records in Massachusetts for the past year has been made by a special commission on maternity benefits. The report shows that ten thousand and fifty-three children under one year of age died in this State during 1919; more than fifteen hundred of these deaths occurred before infants had reached the age of one day. Statistics show that one person in every ten dies in early infancy in Massachusetts. In New Zealand, only one in twenty is lost, while the latest statistics from Russia report that one person in four dies in infancy in that country. The death rate is higher among male babies than among females, 5,670 of the former, and 4,383 of the latter, being the totals for last year. The causes of infant deaths in this State during 1919 are as follows: Congenital debility, prematurity, icterus,

and sclerema, 2,041; malformations, 661; accidents of labor, 799; respiratory diseases (bronchitis, broncho-pneumonia, etc.), 1,321; intestinal diseases, 1,394; all other causes, 2,623.

On August 24, the special commission for the investigation of maternity benefits opened a series of public hearings at the State House. The members of the commission are Dr. Alfred Worcester, president of the Massachusetts Medical Society; Dr. Eugene R. Kelley, commissioner of public health; Robert W. Kelso, commissioner of public welfare; Edward E. Whiting and Mrs. Helen Macdonald.

BROCKTON HOSPITAL.—The events of the year 1918 tried the courage, patriotism, and fidelity of all administrators of hospitals. The report of the Brockton Hospital indicates that it was no exception. Because of the departure of so many of the doctors and nurses for service overseas, those left at home found their duties very much harder than usual. It is a source of satisfaction to the Hospital, however, that so many rendered noteworthy service both at home and abroad.

The first influenza epidemic came in September. At that time the disease was most virulent and a number of patients were lost as well as six of the hospital nurses. Nineteen of the twenty-five nurses were ill by the first of October and it then became necessary to refuse admittance to more patients of any kind. During the second attack of influenza, in November and December, these cases were not received, since the authorities advised against these patients being in a hospital with other patients. Through the efforts of the Board of Health and many volunteers, the epidemic was completely and quickly mastered.

In spite of these drawbacks the number of patients treated in the wards during the year 1918 showed an increase of 39 over the previous year, being 1,085 as compared with 1,046. In the Out-Patient Department the number of patients treated rose from 605 to 1,101, an increase of nearly 500, or 82 per cent. Both the medical and pediatric services showed a fairly large percentage gain.

A new ward building with a normal capacity of 120—140 without crowding—was completed during the year. This building is modern in every way, of fireproof construction, equipped with an electric bed elevator and many other details which adapt the plant to hospital usage. The doctors of the vicinity have inspected this new ward, approved it, and pledged coöperation in the use of it.

Conditions at Brockton Hospital were vastly improved during the year 1919. The "new hospital" treated 3,000 patients, 1,717 of whom were in-patients. The Maternity and X-ray Departments increased their services to a considerable degree.

The receipts of the Christmas Campaign for $15,000 were $30,000, so that the Treasurer's report of January 1, 1920, shows a cash balance of $10,668.07. The Training School of the Brockton Hospital offers a three years' course to young women who wish to learn the science and art of nursing. The theory is given by lectures, demonstrations, and examinations given by well-qualified instructors, each a specialist in his department. Practical instruction is given in class room demonstration and by graduate nurses on the wards. The curriculum is planned to give a thorough knowledge of the sciences upon which nursing is based, to develop technical skill, a well-trained mind, good observation, and high ideals of nursing. There have been seventeen pupils graduated, five of whom remained in the hospital as supervisors and head nurses.

NEW ENGLAND NOTES.

APPOINTMENT OF MR. FRIEND LEE MICKLE.—Mr. Friend Lee Mickle, bacteriologist of the Bureau of Laboratories of the Connecticut State Department of Health, has received an appointment as director of laboratories for the Bureau of Health of Atlantic City, New Jersey.

RECENT DEATHS.

DR. JOHN MORGAN died suddenly at his summer home and birthplace, Hadlyme, Conn., August 28, 1920. He was born in 1845, graduated M.D. from the Yale Medical School in 1869 and settled in general practice at Middletown, Conn. He moved to Springfield, Mass., and joined the Massachusetts Medical Society from that city in 1885. After ten years he settled in Boston, where he had a very large practice in ophthalmology for twenty years. He was the victim of a blackmailing suit for malpractice, where the jury rendered a verdict for damages in a very large amount. In January, 1916, Dr. Morgan returned to Hadlyme, Conn., and opened an office in New York City; he also had an office in Hartford, Conn.

ANNOUNCEMENT has been made of the death of Professor Felix Guyon, a former president of the Paris Academy of Medicine and head of the Hôpital Necker. He was known especially for his work on the diseases of the urino-genital organs.

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Curtis F. Burnam, M.D., Baltimore, Johns Hopkins Medical School.—"Corpus Luteum Extract, with Suggestions as to Its Use in Gynecologic Practice," *The Journal of the American Medical Association*, August 31, 1912.

Adam P. Leighton, Jr., M.D., L.M. (Dublin), Portland, Maine.—"The Use of Luteum Extract in the Treatment of Menstrual Disorders," *American Journal of Obstetrics and Diseases of Women and Children*, November, 1915.

Oliver T. Osborne, M.A., M.D., New Haven, Connecticut, Medical Department, Yale University.—"Ovary: Corpus Luteum," *New York Medical Journal*, September 7 and 14, 1918.

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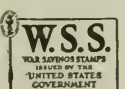

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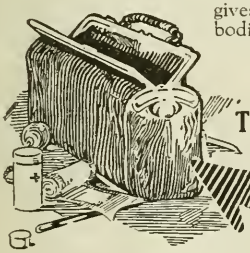

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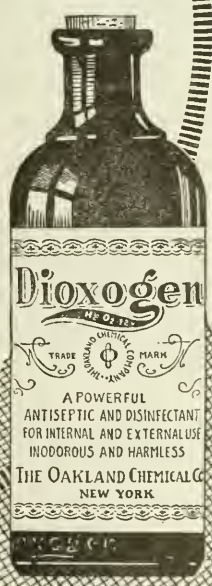

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